



# BART Impact Program

*Metropolitan Transportation Commission*

## THE IMPACT OF BART ON PUBLIC POLICY

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FINAL REPORT

APRIL 1979

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## REFERENCE BOOK

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16. Abstract  This report summarizes the findings and conclusions of the Public Policy Project and presents policy implications for other metropolitan areas planning for rapid rail transit development. Impacts of BART on public policy actions and decision-making processes are assessed four areas--organization, finance, land use and transportation. These BART public policy impact findings are interpreted for each of three different types of communities--urban core, urban residential and suburban.			
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BART IMPACT PROGRAM  
PUBLIC POLICY PROJECT

THE IMPACT OF BART ON  
PUBLIC POLICY



FINAL REPORT  
REPORT NO. DOT-BIP-FR-13-8-78

PREPARED FOR  
U.S. DEPARTMENT OF TRANSPORTATION  
AND  
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
WASHINGTON, D.C.

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## SPONSOR'S NOTE

The BART Impact Program was a comprehensive, policy-oriented study and evaluation of the impacts of the San Francisco Bay Area's new rapid transit system (BART). The program began in 1972, and was completed in 1978. Financing for the Program was provided by the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development, and the California Department of Transportation. Management of the Federally-funded portion of the Program was vested in the U.S. Department of Transportation (DOT). The Metropolitan Transportation Commission (MTC), a nine-county regional agency established by California law in 1970, administered the Program as prime contractor to DOT; the research was performed by competitively selected subcontractors to MTC.

The BART Impact Program studied the broadest feasible range of potential rapid transit impacts, including impacts on traffic flow, travel behavior, land use and urban development, the environment, the regional economy, social institutions and life styles, and public policy. The incidence of these impacts on population groups, local areas, and economic sectors was measured and analyzed.

The results of the BART Impact Program have been synthesized in BART in the Bay Area, the BART Impact Program Final Report (PFR). That report was prepared by MTC and presents MTC's conclusions from and interpretation of the Program's findings. In addition to the PFR, final reports for each of the individual projects in the Program were prepared by the consultants who conducted the research. The reports are listed at the end of this Note. The final reports are supported by numerous technical memoranda and working papers. The conclusions in those documents reflect the viewpoints of the respective consultants based on their research.

Readers of BART Impact Program reports should be aware of the circumstances and the setting in which BART was planned and built and the conditions under which the Program was conducted. An understanding of these factors is critical for interpreting the Program's findings and attempting to apply them to other areas.

First, it is important to note that the San Francisco Bay Area has a sound economy, a good system of highways and public transportation, and distinctive land use and development patterns shaped by the Bay and the hills around it. BART was approved and built during a period of vigorous growth in the Bay Area. The economy was expanding, suburban development was burgeoning, and major increments of highway capacity were being added. Also, the Bay Area already had extensive public transportation services. There were public carriers operating dense networks of local transit services on both sides of the Bay, and there was frequent transbay bus service from many parts of the East Bay to San Francisco. In 1972 before BART opened, approximately 10% of the total daily trips in the three BART counties were made on transit. All of these factors made it difficult in the study to isolate BART's effects from other influences that were affecting such things as travel behavior and urban development.

A second important point is that BART was planned and designed primarily to facilitate travel from outlying suburbs to downtown areas. Multiple stops are provided in the major central business districts, but in other respects BART is

more like a commuter rail system (with long lines and widely-spaced stations) than a New York or Chicago-style subway system of interlocking crosstown lines and frequent stops. The BART system was intended to rival the automobile in comfort, speed, and convenience. Contemporary issues like energy conservation, air quality and service for the transportation disadvantaged were not widely recognized and publicized concerns during the period of BART's design.

The institutional setting in the Bay Area was a third important influence on BART's development. BART was developed as a separate institution without full coordination among existing transportation and regional development planning agencies. BART's planners had to make assumptions about policies and development, many of which turned out to be contrary to policies ultimately adopted by municipalities in the BART District.

A critical element in the study design of the BART Impact Program was the definition of the No-BART Alternative (NBA), the regional transportation facilities and travel patterns judged most likely to have evolved by 1976 if BART had not been built. The definition of an NBA was essential since the Program defined an impact as the difference between what actually occurred with BART and what would have resulted without BART. One cannot be certain about what the region would have been like had BART not been built. But based on an analysis of the political and economic decision history of the Bay Area and the professional judgment of those involved in the Program, it was determined that no significant changes to the area's freeway and bridge systems as they actually were in 1976 would have occurred without BART. It was concluded further that the public transit network and services would have been very similar to what they were just before the start of BART transbay service. One consequence of this assumption is that the NBA provides lower levels of service and less capacity than the with-BART system, and attracts fewer riders. The NBA does not extrapolate beyond 1976 and does not consider how much additional capacity in the transportation system might eventually have been required because of increasing travel demand and congestion.

An important factor affecting the findings was that BART was not operating at its full service level during the period of study by the BART Impact Program. The frequency of trains, their operating speeds, the reliability of their operations, and the capacities provided in peak periods of travel by BART were considerably lower than those originally planned. Trains were running on 12-minute headways instead of the 4.5 minutes originally planned for each of the four lines (90 seconds where three lines converged). BART did not initiate service on all lines simultaneously in 1972 but instead phased in service. The most critical link, the Transbay Tube, was not opened until late 1974. Night service did not start until the end of 1975, and Saturday service started in 1977. Direct Richmond to Daly City service still is not operating, and it now appears that "full service levels," when they are attained, will not achieve the headways and average speeds announced in the original plans.

The final point is that BART had only been operating for a relatively short period of time when its impacts were studied. The impact assessment largely depends on data collected in the first four years of BART's operations. It is likely that some of its impacts, particularly those relating to urban development, will require more time to mature.

## Final Reports

These documents are available to the public through the National Technical Information Service, Springfield, VA 22151:

Metropolitan Transportation Commission, "BART in the Bay Area. The Final Report of the BART Impact Program," MTC, 1979.

Gruen Associates, Inc. and DeLeuw, Cather & Company, "Environmental Impacts of BART," MTC, 1979.

Peat, Marwick, Mitchell & Co., "BART's First Five Years: Transportation and Travel Impacts," MTC, 1979.

Jefferson Associates, Inc., "Impacts of BART on Bay Area Institutions and Life Styles," MTC, 1979.

McDonald & Grefe, Inc., "The Economic and Financial Impacts of BART," MTC, 1979.

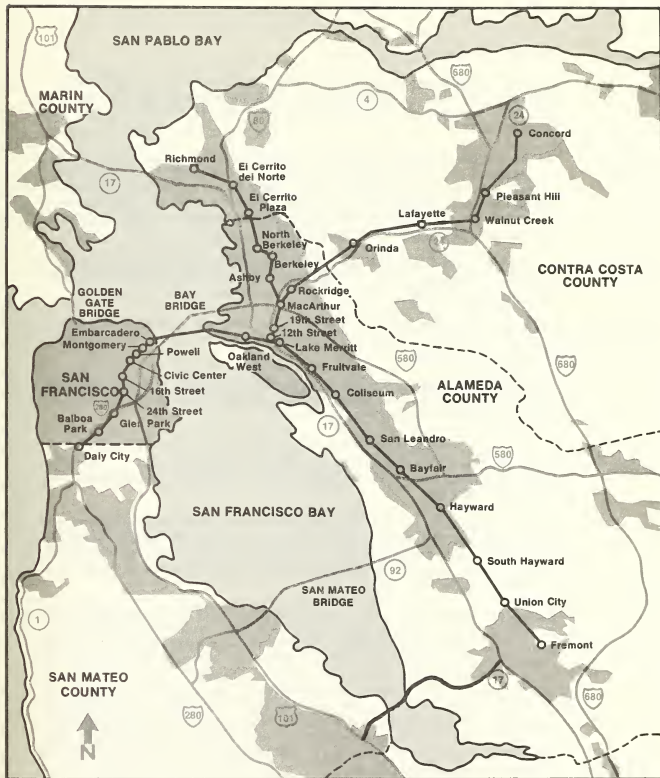
John Blayney Associates/David M. Dornbusch & Co., Inc., "Land Use and Urban Development Impacts of BART," MTC, 1979.

Booz, Allen & Hamilton Inc., "The Impact of BART on Public Policy," MTC, 1979.

Urban Dynamics Associates, "Implications of BART's Impacts for the Transportation Disadvantaged," MTC, 1978.

Alan M. Voorhees & Associates, Inc., "Federal Policy Implications of BART," DOT, 1979.





- BART:** The Bay Area Rapid Transit System
- Length:** The 71-mile system includes 20 miles of subway, 24 miles on elevated structures and 27 miles at ground level. The subway sections are in San Francisco, Berkeley, downtown Oakland, the Berkeley Hills Tunnel and the Transbay Tube.
- Stations:** The 34 stations include 13 elevated, 14 subway and 7 at ground level. They are spaced at an average distance of 2.1 miles: stations in the downtowns are less than one-half mile apart, while those in suburban areas are two to four miles apart. Parking lots at 23 stations have a total of 20,200 spaces. There is a fee (25 cents) at only one of the parking lots. BART and local agencies provide bus service to all stations.
- Trains:** Trains are from 3 to 10 cars long. Each car is 70 feet long and has 72 seats. Top speed in normal operations is 70 mph with an average speed of 38 mph including station stops. All trains stop at all stations on the route.
- Automation:** Trains are automatically controlled by the central computer at BART headquarters. A train operator on board each train can override automatic controls in an emergency.
- Magnetically encoded tickets with values up to \$20 are issued by vending machines. Automated fare gates at each station compute the appropriate fare and deduct it from the ticket value.
- Fares:** Fares range from 25 cents to \$1.45, depending upon trip length. Discount fares are available to the physically handicapped, children 12 and under, and persons 65 and over.
- Service:** BART serves the counties of Alameda, Contra Costa and San Francisco, which have a combined population of 2.4 million. The system was opened in five stages, from September 1972 to September 1974. The last section to open was the Transbay Tube linking Oakland and the East Bay with San Francisco and the West Bay.
- Routes are identified by the terminal stations: Daly City in the West Bay, Richmond, Concord and Fremont in the East Bay. Trains operate from 6:00 a.m. to midnight on weekdays, every 12 minutes during the daytime on three routes: Concord-Daly City, Fremont-Daly City, Richmond-Fremont. This results in 6-minute train frequencies in San Francisco, downtown Oakland and the Fremont line where routes converge. In the evening, trains are dispatched every 20 minutes on only the Richmond-Fremont and Concord-Daly City routes. Service is provided on Saturdays from 9 a.m. to midnight at 15-minute intervals. Future service will include a Richmond-Daly City route and Sunday service.\* Trains will operate every six minutes on all routes during the peak periods of travel.
- Patronage:** Approximately 146,000 one-way trips are made each day. Approximately 200,000 daily one-way trips are anticipated under full service conditions.
- Cost:** BART construction and equipment cost \$1.6 billion, financed primarily from local funds: \$942 million from bonds being repaid by the property and sales taxes in three counties, \$176 million from toll revenues of transbay bridges, \$315 million from federal grants and \$186 million from interest earnings and other sources.

March 1978

\*Sunday service began in July, 1978

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## SUMMARY AND CONCLUSIONS

The Public Policy Project was designed to measure both the direct and indirect impacts of BART on local public policy actions and the public policy-making processes of local, regional and state governments. The assessment of these public policy actions and processes provides a number of lessons for local officials in other communities planning rapid rail transit. These lessons are intended to help local officials make more informed policy decisions to allow communities to take advantage of rapid rail transit development in meeting other established local objectives.

This summary presents the overall conclusions of the Public Policy Project in three sections. Finally, policy implications are outlined for each of three levels of government--local, regional and state.

## SUMMARY

Overall, public policy responses to BART have been only marginally different from what would have been expected in the No-BART Alternative scenario (in the absence of BART and no other major capital investment in the Bay Area's transportation systems).

However, BART has had a few significant impacts on public policy decisions, primarily in the areas of land use planning and policy and transit financial policy. BART has had little or no impact in other policy areas studied such as institutions and local financial and transportation policy decisions and processes.

Further, public policy impacts of BART are generally more pronounced in urban core areas compared with urban residential or suburban areas and are normally the result of local rather than regional or state policy decisions.

### 1. OVERALL LEVEL OF IMPACT

#### Public Policy Responses To BART Have Been Only Marginally Different From What Would Have Been Expected In The No-BART Alternative Scenario

Bay Area public officials took few policy actions directly or indirectly because of BART. Most of the actions that were taken in response to BART were intended to protect against, rather than take advantage of, BART. Further, local public officials made policy decisions individually, rather than as part of a coordinated strategy to provide a balanced and cost effective total transportation system for the Bay Area.

BART also had little or no lasting impact on the policy decision-making processes of local governments in the Bay Area. Policy decisions were generally made using existing governmental decision-making processes. Further, BART policy decisions were generally consistent with general hypotheses expressed in policy literature--issues were raised as problems, not opportunities; decisions were made incrementally and implementation of decisions did not always result.

Local public policy actions have not been a primary influence on BART design or operations. The absence of significant public policy impacts on BART reflects more the lack of comprehensive policy actions than the lack of a causal relationship. As mentioned earlier, public officials generally took few policy actions in response to BART. What actions were taken, however, did have some, although generally a minor, impact on BART.

## 2. MOST SIGNIFICANT PUBLIC POLICY IMPACTS

Although BART's overall impact on public policy has been small, BART has had a few significant impacts on policy decisions, primarily in the areas of land use planning and policy and transit financial policy. For example:

### (1) Land Use Policy

BART had its most significant impact on local land use policy. High expectations of BART's impact on land use and development resulted in the initiation of special planning studies for BART station areas and corridors, resulting in General Plan and zoning changes in each of the case study cities.<sup>1</sup> Further, BART was a primary cause for the expansion of redevelopment areas in San Francisco and Oakland and the implementation of the Market Street Beautification Project and other less significant public improvement projects.

### (2) Land Use And Development

Land use policy changes as a result of BART have played a noticeable role in affecting the patterns of land use and development in the BART-served communities. However, the degree of change generally depended more on the extent of market demand and the degree to which policy controls were matched with incentives than on BART.

For example, in San Francisco the Market Street Beautification Project, made politically and financially feasible by BART, allowed the city to encourage development along Market Street near BART and impose restrictions on development in other parts of the CBD. In contrast, where market demand was not present and zoning incentives near BART were not combined with restrictions elsewhere (as in Oakland and Richmond), changes in land use due to BART have been less noticeable. In areas where moderate market demand developed, but where substantial community opposition existed, early efforts to encourage development through zoning were reversed. The more restricted controls adopted have so far succeeded in preserving the existing neighborhood scale.

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<sup>1</sup>San Francisco and Oakland central business districts, San Francisco Mission and Oakland Rockridge residential districts, the urban residential area of Richmond and the suburban cities of Walnut Creek and Fremont.

### (3) Transit Finance Policy

The Metropolitan Transportation Commission has more authority over allocation of transit funding and monitoring transit operator performance than would have been likely without BART. BART requires a permanent source of public funds to maintain its operations, thereby increasing the total financial resources for transit within the region over what would be expected under the No-BART Alternative. This need for increasing resources has led to more involvement by the State Legislature--first in authorizing additional funds and then in giving MTC increased authority for monitoring the use and allocation of those funds.

\* \* \* \* \*

In contrast, BART has had little or no impact on other policy areas studied such as institutional arrangements and local government financial and transportation policies. For example:

#### (1) Institutional Arrangements

BART has caused no apparent lasting change in institutional arrangements at the local or state level. However, BART did have some impact on the direction of MTC. In general, governmental organizations in the Bay Area responded to BART plans and activities within existing organizational structures and decision-making channels. The cities of San Francisco and Oakland did establish short-term ad hoc committees and appointed a BART liaison within the city government to obtain necessary permits and traffic plans to facilitate BART construction. However, smaller case study cities found no need for these positions or committees.

#### (2) Local Government Financial Policy

BART allowed some cities to benefit from new sources of revenue, but generally caused little change in local government budgetary or capital improvement financing decisions. BART had a favorable impact on local government finances by providing new sources of financing for public improvement projects. However, BART had a minor adverse impact on local government finances by requiring cities to incur some additional operating expenditures for maintenance caused, in part, by BART.

While BART was a highly visible part of the rapidly rising composite tax rates in the 1960's, the BART debt burden and tax rate did not influence local tax rate or bonding decisions.

(3) Highway Policy

BART has had little impact on the number and type of highway facilities constructed in the Bay Area. BART's main impact on highway planning policy was in the form of specific agreements for joint highway/rapid transit development.

(4) Local Transit Policy

BART has played only a limited role in the creation of new local transit systems or in the policies of existing transit systems. An analysis of two specific new local transit service proposals (Contra Costa County and Tri-City in Alameda County) and a general review of recent local transit service development throughout the State of California, indicated that system development near BART appears more related to newly available Federal and State subsidies than to BART. Despite early attempts to facilitate coordination, BART has also had relatively little impact on the operations of the two major existing transit operators in the BART District, AC Transit and MUNI.

(5) Local Traffic And Parking

Local officials have taken few policy actions to alleviate overflow parking and traffic congestion near BART stations. BART had a noticeable adverse impact on local automobile transportation near many BART stations. Specific outcomes were an increase in local traffic congestion and the lack of available parking at some BART stations. Local jurisdictions took few policy actions to try to alleviate these problems.

3. AREAS MOST AFFECTED BY PUBLIC POLICY IMPACTS

BART has had a comparatively greater impact on public policy decisions in urban core areas than in urban residential or suburban areas. The urban core areas of Oakland and principally San Francisco had more opportunities for BART impacts and took more aggressive policy actions which allowed them to take greater advantage of BART than other areas.

Public policy actions in response to BART were most often made at the local, rather than the regional or State level of government. The emphasis on local policy with respect to BART is a result of the Bay Area institutional setting. During BART planning and development, almost all transit-related decisions were the responsibility of strong local governments or independent transit

agencies. Regional agencies involved in transportation decisions have only been formed in the last ten years. These agencies have yet to play anything but an advisory role in transportation policy decisions. State government, until recently, had expressed little interest in local transportation policy.

#### 4. POLICY IMPLICATIONS

Although metropolitan areas now planning rapid rail transit systems are doing so in a significantly different policy environment than did BART in the early 1960's, policy makers in other metropolitan areas can benefit from the BART experience. This section summarizes the more significant implications in terms of the level of government action required--local, regional or state.

##### (1) Local Policy Implications

In other metropolitan areas with a history of strong local government control, most policy actions related to rapid rail transit should be made at the local level of government.

The BART experience suggests that local objectives for rapid rail transit should be set early and local planning should begin well before any type of regional system is approved. Although compliance with Federal Alternatives Analysis guidelines mandates extensive transportation and financial planning, local governments should be sure that they consider the expected impact of various alternatives on their own communities in light of their own local transportation, land use and economic objectives.

Local officials can most likely have their greatest impact on rapid rail transit policy through long range local planning. The traditional General Plans and their various elements are the most appropriate means for reassessing local policy and its relationship to transit. These plans should emphasize land use policy, but also consider economic and development policy as well as local financial policy.

Further, once the decision to build rapid rail transit has been made, local officials should be prepared to take supportive policy actions in areas such as:

- . Land Use Policy--Local officials can use rapid rail transit to help achieve local growth or preservation objectives. The BART experience suggests that rapid rail

transit will probably not alter market demand where little now exists. However, rapid rail transit can influence the location and form of development if it is accompanied by supportive local land use policies and other incentives.

- . Traffic and Parking Policy--The adverse effects of parking and traffic congestion caused by BART suggest that other jurisdictions should ensure that parking policy, particularly in suburban areas and at terminal stations, receives high priority attention from local officials. Alternatives include requiring additional transit parking capacity, implementing parking or traffic restrictions or permit programs, or encouraging public transit feeder service.

- . Financial Policy--Local officials can expect to use rapid rail transit effectively, especially in large cities, to further local improvement objectives and benefit local revenues. Alternatively, local transit system financing decisions may be more difficult with the addition of a rapid rail transit system.

The formation of a new regional rapid transit organization will probably have little effect on organizational structures and practices at the local level. However, local officials should expect to use additional staff time and possibly consultant assistance to perform necessary planning and analysis for rapid rail transit. Large cities may want to consider appointing a rapid transit liaison reporting to the mayor or city manager's office to expedite decisions related to rapid rail transit design and construction within the city.

## (2) Regional Policy Implications

Experience in the Bay Area suggests that the lack of strong regional leadership in transit planning and financing can lead to more competitive and time consuming decision processes related to rapid rail transit development.



In light of these problems, other metropolitan areas should ensure, prior to approval of rapid rail transit, that institutions are in place with appropriate levels of authority to make the types of decisions that must be made at least on a regional, if not a state basis. Planning and policy decisions which should take place at this level are:

- . Regional land use, economic and transportation planning as a basis for minimizing competition among local communities and local or regional transit operators.
- . Regional transportation financial planning and policy discretionary funding allocation.
- . Transportation planning and policy across major modes (including highway planning and automobile pricing policy).

### (3) State Policy Implications

The State of California had little involvement in transit generally as well as in BART planning, design and construction, but has become more involved as increasing transit deficits required new sources of funding from the state level. The role of any state in transit planning and financing overall will probably be the most important factor in determining the role of the state in rapid rail transit planning.

Although most rapid rail transit policy decisions should be left to the local and regional levels of government, state agencies and legislators may need to be involved in setting planning priorities for development of other transportation modes, particularly in the area of highway planning and construction and in financial planning related to any state funds for transit support.

\* \* \* \* \*

The findings and conclusions about Bay Area public officials' response to BART, as presented in this report, suggest that timely and coordinated public policy actions can be important in directing rapid transit system development to achieve local objectives.



However, public officials in other jurisdictions must generally act more aggressively than Bay Area officials did if they intend to take full advantage of rapid transit development.

Local governments considering rapid transit development should become involved early in the planning process. Local officials should recognize both the opportunities and costs of rapid rail transit and formulate specific local objectives with these in mind. Once local objectives for rapid transit are clearly defined, officials can formulate appropriate public policy actions designed to help a community achieve these objectives. The experience of rapid rail transit development in other metropolitan areas should serve as an important input in this process.



## I. INTRODUCTION

### 1. THE BART IMPACT PROGRAM

As the first regional rapid transit system built in the United States in more than 50 years, the San Francisco Bay Area Rapid Transit System (BART) is a potential learning model for metropolitan areas now considering investments in transportation facilities. The BART experience is also of interest to the Federal Government in allocating financial aid for local transportation improvements, urban development and environmental protection in urban areas. The BART Impact Program (BIP) is designed to meet immediate needs for accurate information on the BART investment and to provide input for future transportation decisions in the Bay Area and throughout the nation.

The BIP is a comprehensive, policy-oriented study and evaluation of the impacts of the BART system. The BIP covers the entire range of potential rapid transit impacts, with major projects covering travel behavior, land use and urban development, the environment, the regional economy, social institutions and life styles, and public policy. The incidence of these impacts on population groups, local areas, and economic sectors is being measured and analyzed.

### 2. THE PUBLIC POLICY PROJECT

The Public Policy Project can be viewed as a major integrating chapter in the overall BIP. Each individual BIP project measured and evaluated BART's impacts on a variety of social, economic, transportation and community factors. The Public Policy Project, in turn, analyzed the relationship between BART and public policy actions and processes, specifically:

- . The direct and indirect impacts of BART on public policy actions.
- . Any lasting changes in local policy decision-making processes due to BART.
- . The effect of local policy actions on BART design and operations.

The project covered BART's impacts on local, regional and state governments. Various elements of the governmental system and political process were also studied including the influence of the media, voting behavior and the role of community organizations.

More specifically, the project included an examination of:

- . The changes in policy-making processes and outcomes that occurred as a result of the planning for and operation of BART.
- . The relationships between these policy changes and the perceptions and actions of a combination of participants which induced these changes.
- . The local residents and groups most affected in a positive or negative way by BART-related policy impacts.
- . The implications which these findings have for local governments considering or already undertaking substantial rapid rail transit investments.

The purpose of this document is to outline the results of this examination by describing and interpreting the relationships between BART and public policy in some detail. The report is not intended to draw definitive conclusions on general causes for the BART impacts discussed, other than their general relationships to public policy.

Although implications (or "lessons learned") are suggested throughout the report, they are analyzed in far greater depth in a separate Final Report on the Local Policy Implications (LPI) of BART. A summary of the LPI report is included as Appendix A in this report.

### 3. LOCAL POLICY IMPLICATIONS

The Local Policy Implications Work Element, the final activity of the Public Policy Project, is one of three BIP integrating studies (the others are Federal Policy Implications and Implications for the Transportation Disadvantaged). The purpose of this work was to analyze and interpret the findings and conclusions of the six major BIP projects and to develop public policy implications in the form of practical guidelines for local government officials either considering an investment in rapid rail transit or in the process of designing and constructing a rapid rail transit system.

A local policy implication can be defined as an improvement in the policy process to enable local officials to make more informed decisions about rapid rail transit development to help achieve local community objectives.

The LPI was intended to answer four major questions as a basis for developing local policy implications of the BART experience:

- . What goals and expectations did local officials have for BART development?
- . What policy actions did local officials take in response to these expectations?
- . What outcome resulted? What was the impact of BART (difference between BART and No-BART Alternative scenario)?
- . How does this eventual outcome compare with local officials' expectations? Has BART met its objectives?

The answers to these questions provide the necessary background on the relationship between BART and public policy. Specific local policy implications are developed by asking the following interpretive questions:

- . Were the original local goals and expectations for BART really attainable and/or appropriate?
- . If not, could a modification of goals and expectations provide a better basis for local policy decisions related to rail transit?
- . If so, what improvements in the local policy process can be suggested to help local communities better achieve their objectives for rapid rail transit?

A brief summary of the LPI report is included as Appendix A to this report.

#### 4. ORGANIZATION OF THIS REPORT

This report presents Public Policy Project results in four areas.

First, the report discusses the project methodology including a review of theoretical concepts relevant to rapid rail transit public policy.

Second, the report presents the public policy impacts of BART in each of four major areas:

- . Organization--considering the institutional setting for public policy decisions related to BART.
- . Finance--assessing local revenue, expenditure and capital improvement policy relative to BART construction and operations.
- . Land Use And Development--reviewing changes in land use policy and resulting changes in land use and development related to BART.
- . Transportation--describing BART's role in policies for the overall Bay Area transportation system.

Third, the report compares and contrasts the broad range of public policy impacts for each of three types of communities in the Bay Area: urban core, urban residential and suburban areas.

Finally, the report presents overall conclusions about the public policy impacts of BART as well as implications for Bay Area communities and other metropolitan areas considering rapid rail transit investment.

## II. STUDY DESIGN

### 1. THEORETICAL FRAMEWORK

Public policy literature provides useful themes for identifying the potential impacts of BART on public policy, but does not provide a ready made methodology to use in trying to assess those impacts. Most of the relevant literature takes the form of case studies covering policy-making examples such as budgeting and the location of public housing.<sup>1</sup> Some attempts have been made to synthesize results into tentative models.<sup>2</sup> However, few reliable and comprehensive models have emerged from research efforts thus far.

The public policy literature does outline general hypotheses in three areas--issue formation, policy decision-making and implementation--which suggest the types of expected policy responses to a major capital investment like BART.

#### (1) Issue Formation

Generally, policy decisions result from issues or problems, not from opportunities to achieve local policy objectives. Further, the greater or more immediate the problem, the more attention it receives.

The attention of public decision-makers is almost always a scarce resource. These officials can cope with only a limited number of issues which can quickly be replaced by new emergency issues.<sup>3</sup> Further, direct experience or easy comprehension of an issue by the public or

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<sup>1</sup>Two prominent case studies of policy making are: Aaron Wildavsky, The Politics of the Budgetary Process (Waltham, Maryland: Little Brown & Co., 1964) and Martin Meyerson & Edward C. Banfield, Politics, Planning in the Public Interest (New York: Free Press, 1955).

<sup>2</sup>See David Braybrooke and Charles Lindblom, A Strategy Of Decision: Policy Evaluation as Social Process (New York: Free Press, 1963); Geoffrey Vickers, The Art of Judgment: A Study of Policy Making (New York: Basic Books, 1965); Peter Self, Administrative Theories and Politics: An Inquiry into the Structure and Processes of Modern Government (Toronto: University of Toronto Press, 1973).

<sup>3</sup>See Donald Schon, Beyond the Stable State: Public and Private Learning in a Changing Society (New York: W.W. Norton, 1971).

exposure of the issue to the media appear to be important for moving issues into decision-making processes.<sup>4</sup>

Therefore, public officials might be expected to respond to only the most visible and problematic issues related to BART, rather than initiating policy to take advantage of opportunities BART can provide.

## (2) The Policy Decision-Making Process

The incremental theory of decision-making appears to be most descriptive of the way public officials actually make decisions<sup>5</sup> and most applicable to this project's analysis of policy decisions in response to BART. Incrementalism means that "... what is feasible politically is policy only incrementally or marginally different from existing policies."<sup>6</sup>

Incrementalism suggests that policy-makers are primarily concerned with preserving the status quo and ensuring that new policy decisions do not restrict the continued growth of existing programs. The use of this form of decision-making generally results in policies that "minimize or underrate unconventional, controversial, intangible, or unquantifiable solutions [to problems], while favoring those values and solutions that are somewhat conventional, relatively non-controversial, quantitative, and factually based."<sup>7</sup>

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<sup>4</sup>William Solesbury, "Issues and Innovations in Environmental Policy in Britain, West Germany and California," Policy Analysis, Winter, 1976 (Berkeley: University of California Press, Vol. 2, No. 1).

<sup>5</sup>The leading proponent of incrementalism undoubtedly is Charles Lindblom, "The Science of 'Muddling through' (Public Administration Review, XIX, 1959), pp. 79-88; Charles Lindblom, The Intelligence of Democracy (New York: MacMillan, 1964); Charles Lindblom, The Policy-Making Process (Englewood Cliffs, N.J.: Prentice-Hall, 1968); Charles Lindblom and David Braybrooke, The Strategy of Decision (New York: Free Press, 1963).

<sup>6</sup>Charles Lindblom, The Policy-Making Process, op. cit., pp. 24-25; William J. Murin, Mass Transit Policy Making (Lexington, Mass.: Heath Lexington Books, 1970), p. 96.

<sup>7</sup>Edward C. Banfield, Political Influence (Glencoe, Ill.: The Free Press, 1960), p. 330, see Murin, op. cit., p. 97.



For decision-making in response to BART, several interests, differing or possibly conflicting value preferences, make policy decisions difficult and thereby encourage incrementalism. Policy decisions as a result of BART would most likely represent small changes over existing policies or new policies which evolved over the long period of planning for and construction of BART.

### (3) Policy Implementation

The process of public policy implementation has only recently been addressed in literature on policy-making. These recent investigations are only beginning to develop insights about how decision-making can carry through to implementation.

Most importantly, research suggests that policy decisions do not necessarily result in any implementation. Because "responsibility for implementation tends to slip between the cracks,"<sup>8</sup> outcomes presumed to follow from policy-making often do not occur.

Generally, one might expect BART-related public policy decisions to be implemented most easily where decision-makers and agencies agree on intended outcomes, where few clearance points are needed for implementation to occur, and the initiators of policy decisions personally commit themselves and their resources to implementation.<sup>9</sup>

## 2. RESEARCH APPROACH

The Public Policy Project is an evaluation of the direct and indirect impacts of BART on government and the political process and their corresponding impacts, if any, on BART. The project focused on the three primary areas of the public policy-making process--issue formation, decision-making and implementation--as a basis for identifying and interpreting the impacts of BART.

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<sup>8</sup>Walter Williams, "Implementation Analysis and Assessment," in Policy Analysis, Summer, 1975 (Berkeley: University of California Press, Vol. 1, No. 3).

<sup>9</sup>See Jeffrey L. Pressman, Aaron Wildavsky, Implementation: How Great Expectations in Washington Are Dashed in Oakland Or Why It's Amazing That Federal Programs Work at All (Berkeley: University of California Press, 1973).

Four primary local policy areas--organization, finance, land use, and transportation--were judged to represent the most significant areas where a system like BART would affect local policy. Specific research questions and approaches used to investigate BART impacts in each of these four areas are included in the appropriate chapters. Available data and results from other BIP projects were used to identify BART impacts and resulting public policy changes. These findings were usually verified to ensure consistency of results.

Due to the rather elusive nature of the local policy-making process, the primary data collection technique for this project was a series of interviews with key informants in BART-related public policy decisions. Interview guides and standard formats for recording and analyzing data were used throughout the study for control purposes.

The expected difficulty in identifying and later verifying public policy impacts of BART led to the almost exclusive use of case study communities as a basis for study research. The use of case studies allowed the project to look in more depth at a smaller number of significant and representative impacts, rather than to superficially examine a broad range of less significant impacts. However, where significant BART impacts were known to have occurred in communities outside the designated case study areas, these communities were included in the scope of work.

The following case study areas were chosen by the BART Impact Program as representing the diversity of demographic and urban development characteristics in the BART service area.

. Urban Core--San Francisco And Oakland

BART was explicitly designed to bring travelers from outer areas of the metropolitan region to the two major downtowns of San Francisco and Oakland. There are important differences between the two downtowns, and thus they were studied comparatively.

. Urban Residential Areas--Mission (San Francisco), Rockridge (Oakland), And Richmond

Much of the BART service area is in the highly urbanized area of the East Bay (the Bay plain from Richmond to Hayward, west of the Oakland-Berkeley Hills), as well as in the densely settled city of San Francisco itself. These urban residential areas are distinguished by their residential and development character.

. Suburban Residential Areas--Walnut Creek And  
Fremont

Just as BART was intended to focus on the San Francisco-Oakland core, it also was meant to serve the distant suburbs that began their greatest growth in the 1950's and 1960's. These two areas have participated dramatically in that growth, but in different ways.

BART's impact of the overall policy-making processes in each of these three types of communities is summarized in Chapter VII of this report.

3. DEFINITION OF BART PUBLIC POLICY IMPACT

The definition of a public policy impact of BART is a critical underpinning of this project. A BART public policy impact can be defined as a change in local public policy over what would have been expected in the absence of BART.

The No-BART Alternative (NBA) has been defined by the Metropolitan Transportation Commission as the transportation system judged most likely to have evolved in the central Bay Area by 1976 had the decision to build BART not been made in 1962. The purpose of the NBA is to provide a realistic estimate of the net effects of BART. A consistent definition of the NBA is being used by all of the projects in the BIP.

The NBA was defined by analyzing the political and financial environment in the Bay Area at the time of the decision to build BART and in the following years in order to determine the most likely components of the NBA. These components were further reviewed in the context of actual 1976 travel demand and 1971-76 trends in the BART corridors to ensure that the level of service provided by the NBA was plausible.

The NBA includes all freeways and principal local streets which existed in 1976, but no additional highway facilities. There are relatively minor changes in the operations of the major transit services in the central Bay Area from the actual 1971 pre-BART base to the hypothetical 1976 NBA: 1973 was found to be a peak year for provision of transit service by Greyhound (commuter buses from central Contra Costa County to downtown Oakland and San Francisco) and AC Transit's transbay commuter service. Those levels of service by those two carriers are retained in the NBA. In the NBA, small improvements in frequencies in the San Francisco MUNI's routes in the Mission corridor were made, but no new routes were introduced. The only capital cost associated with the NBA is the potential addition of 15 coaches for peak-hour service in San Francisco's Mission corridor.

Although use of the NBA as defined was not always appropriate for this project, some form of comparison was used in all cases as a means for isolating BART's role in public policy changes. Forms of comparison used included comparison of:

- . Present with pre-BART policy.
- . Actual public policy decisions with what documentation shows or decision-makers claim would have been done in BART's absence.
- . The policies of communities served by BART with communities not served by BART.

Such comparisons are appropriate means for identifying and analyzing the policy impacts of BART for different issues in varying settings.

### III. GOVERNMENTAL ORGANIZATION AND OPERATIONS

The purpose of this chapter is to assess the impact of the BART District on the formation of and changes in other governmental and community organizations in the Bay Area. Further, the effect of these organizational changes resulting from BART/local government interaction was explored.

The BART District was created in 1957 as the first regional rapid transit district in the Bay Area, as well as a new regional governmental agency. Despite the short history of BART, the structure and operations of the agency have changed dramatically in response to the transition from system planning to construction and then to operations.

During much of BART's development, governmental authority in the Bay Area was almost entirely in the hands of individual local jurisdictions. A number of regional agencies were formed in the late 1960's and early 1970's in response to specific regional issues (e.g., transportation, land use planning, air pollution). Until the last two or three years these agencies have had little authority over BART planning. Likewise, state agencies have not played a strong role in issues related to BART.

For this analysis, four types of potential changes in government organization were selected and policy research questions outlined for each:

- . Was BART a direct or indirect cause for any of the post 1962 municipal incorporation attempts in the BART counties?
- . Has the formation of the BART District caused the formation of new or the strengthening of existing city or county governmental units, created new staff positions or changed existing management or planning processes to deal with BART organization and system impacts?
- . Has BART's particular management and organizational structure influenced the formation and/or alteration of regional and state agencies?
- . Did BART cause the formation and/or cohesion of any community (particularly minority) groups and did these groups have any effect on local decision-makers or on BART?

Findings related to each of these questions are presented in the first four sections of this chapter. Overall conclusions and implications are summarized in the last section.<sup>1</sup>

## 1. MUNICIPAL INCORPORATION

### BART Was Not A Cause For Recent Municipal Incorporation Decisions

Substantial growth in many Bay Area communities has resulted in a number of municipal incorporations since 1950. To assess BART's role in these incorporations, seven incorporation attempts were researched--the four successful municipal incorporations within the BART service area since 1962 and three representative attempts among many unsuccessful ones, including one outside the immediate BART service area. The history and decision-making process for each incorporation attempt was documented, with careful attention to any causal factor related to BART. Special emphasis was paid to the positions and testimony of both proponents and opponents of incorporation, the reasons advanced for incorporating and the resulting incorporation decision.

Exhibit I displays results of this research. BART had no apparent impact on any of the seven incorporation decisions studies. Rather, it appears that incorporation attempts were initiated in response to a particular community issue--such as local identity, growth, planning and land use control--or other public works projects--such as sewer or water availability, highway construction. In no case was BART mentioned as even an indirect cause for any incorporation attempt.

## 2. LOCAL GOVERNMENT ORGANIZATIONAL STRUCTURE AND OPERATIONS

### BART Caused Only Minor Changes In Local Government Organization, Staffing And Operations

The Bay Area is characterized by strong local government structures, generally a City Manager/Council form (only San Francisco differs with a weak mayor form). The two large urban cities (San Francisco and Oakland) have large, well established bureaucratic structures. Alternatively, many smaller or newer communities in the Bay Area have smaller and more streamlined structures.

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<sup>1</sup>For further detail in each of the four study areas see Booz, Allen & Hamilton Inc., Governmental Organization and Operations, Document No. DOT-BIP-WP-28-8-77 (Berkeley: Metropolitan Transportation Commission, December 1977).

EXHIBIT I  
PUBLIC POLICY PROJECT  
BAY AREA MUNICIPAL INCORPORATION ATTEMPTS

INCORPORATION ATTEMPT	RESULT	REASON FOR OUTCOME
1. Pleasant Hill*	Incorporated 11/61	<ul style="list-style-type: none"> <li>• Preserve community identity.</li> <li>• Provide more effective control of government and land use decisions.</li> <li>• Improve police services.</li> </ul>
2. Clayton	Incorporated 3/64	<ul style="list-style-type: none"> <li>• Prevent annexation to the City of Concord and maintain local identity.</li> </ul>
3. Lafayette*	Incorporated 7/68	<ul style="list-style-type: none"> <li>• Gain local community control of zoning, land use and development decisions.</li> </ul>
4. Moraga	Incorporated 11/74	<ul style="list-style-type: none"> <li>• Enhance communications between citizens and local government.</li> <li>• Preserve community identity.</li> <li>• Gain local control of land use and development decisions.</li> </ul>
5. Orinda*	Incorporation failed	<ul style="list-style-type: none"> <li>• Opposition to increased taxes for city services that would result from incorporation.</li> <li>• Desire to maintain a rural atmosphere.</li> </ul>
6. Muir	Incorporation failed	<ul style="list-style-type: none"> <li>• Proposed incorporation was denied by county Local Area Formation Commission</li> </ul>
7. San Ramon Valley (outside immediate BART service area)	Incorporation failed	<ul style="list-style-type: none"> <li>• Voters had no identity with the combination community proposed.</li> <li>• Opposition to increased taxes for city services that would result from incorporation.</li> </ul>

\* Contain BART station



The planning and design of the BART system required continual and time consuming interaction of BART officials and their contractors with local government officials in communities served by BART. Further, legal agreements had to be negotiated between BART and each local government for the use of public rights-of-way by BART. This requirement gave local governments an opportunity to review and possibly amend BART plans in light of their own local objectives and policies.

Overall, the involvement of local governments with BART caused no lasting change in local government organization, staffing and operations during BART planning, construction or operations phases.

#### (1) Formation Of New Organizational Structures

BART caused minor, temporary changes in local organizational structure in large cities (Oakland and San Francisco). However, BART caused no noticeable change in organizational structure in smaller suburban communities.

The two large cities (San Francisco and Oakland) both developed an inter-departmental committee structure as a vehicle for interacting with BART during the construction phase.

Although the committee structures in both cities were similar, their effectiveness differed significantly, according to BART staff who worked with both. For example, San Francisco limited BART's access to city officials strictly to the Project Manager of the Transit Task Force (the staff to the inter-departmental policy committee). Oakland used a more flexible approach, allowing BART to contact individual departments for specific information. Although the San Francisco alternative allowed better coordination in a single location, it used the existing bureaucratic channels and was not always responsive within BART system deadlines.

Alternatively, smaller cities within the BART District (Richmond, Fremont and Walnut Creek) generally responded to BART through existing organizational channels. Local decision-makers cited two reasons for the lack of organizational impact:

- . The city structures had few organizational units and clearly delineated lines of authority; therefore decisions about BART could be made efficiently.



- . Smaller cities usually had only a single BART station and at-grade or aerial construction, requiring fewer decisions in response to BART.

## (2) Changes In Local Government Staffing

BART caused a noticeable increase in the workloads of most city governments. Cities managed this workload through creation of some new staff positions and by hiring consultants for special planning and analysis.

City staff was generally used to respond to BART problems, rather than initiate actions to take advantage of BART. Cities created three types of new positions--Public Works Liaison (San Francisco, Oakland, Richmond), Transportation Planner (Walnut Creek) and Traffic Engineer (Fremont). Each position was either abolished or reclassified after BART construction ended. Almost no local staff time has been spent in activities related directly to BART since.

On the other hand, consultants generally were hired to study ways to take advantage of BART. Consultants most often conducted special planning or economic studies of BART corridor or station areas. These studies were almost all financed through Federal planning grants.

## (3) Changes In Local Planning And Management Processes

BART appears to have caused only minor changes in local planning and management processes or other operations. The only two apparent impacts in the case study areas were:<sup>2</sup>

- . BART was an indirect cause for the inclusion of the Rockridge Community Planning Council (RCPC) in the review process for all city planning proposals affecting the Rockridge community.
- . In San Francisco, neighborhood concern about BART and projected development did lead the Mission Planning Council to request and receive from the City Planning Department

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<sup>2</sup> See Jefferson Associates, Impacts of BART on Political Institutions, Document No. DOT-BIP-IM 32-6-77 (Berkeley: Metropolitan Transportation Commission, May 1977).

special studies of development impacts of BART on the Mission District. This reinforced a precedent of the City Planning Department to conduct special studies for community organizations when the need arises.

### 3. REGIONAL AND STATE AGENCIES

#### BART Had Some Impact On The Funding And Priorities But Not The Formation Of Other Regional And State Agencies

Since the 1950's, a number of new regional and state agencies (including BART) have been formed, representing a major new approach to governance and transportation in the Bay Area. The development of BART as the first regional transportation agency in the Bay Area did not alone cause the formation of any other regional or State agencies. However, BART did affect the operating practices, staffing and funding of one regional agency (Metropolitan Transportation Commission) and one State agency (California Department of Transportation).

A review of recent regional and State agency formations led to the study of two regional agencies--Bay Area Conservation and Development Commission (BCDC) and the Metropolitan Transportation Commission (MTC)--and one State agency--California Department of Transportation (CALTRANS)--which had some relationship with BART.

#### (1) Bay Area Conservation And Development Commission

The California State Legislature formally established BCDC in 1968 to monitor planning for the conservation and development of San Francisco Bay and regulate development activities in and near the Bay. The San Francisco Bay Plan does set forth a number of regional transportation objectives consistent with BART, but concern about controlling further development near San Francisco Bay was the reason for BCDC's existence, not BART.

#### (2) California Department of Transportation

BART had no apparent impact on the original formation of CALTRANS, although BART did cause some changes in CALTRANS staff workload and operating practices at the district level.

In 1973, the California State Legislature created CALTRANS in response to changing Federal transportation policy from a narrow orientation toward streets and highways to a broader multi-modal transportation policy approach.

BART caused some increase in CALTRANS district workload by its decision to locate a number of line segments along highway rights-of-way. CALTRANS staff were involved in lengthy negotiations with BART on terms for this joint highway/transit development as well as later construction coordination. This increase in staff workload, although considered significant by department managers, did not result in any changes in CALTRANS staff size or organizational structure.

### (3) Metropolitan Transportation Commission

BART was not a major cause for the creation of MTC, but BART has affected MTC's evolving role in regional transportation issues.

MTC was formed by the California State Legislature in 1970 in recognition of the need for a comprehensive, balanced approach to Bay Area transportation planning. The creation of the BART District as another of a multitude of transit operators and jurisdictions amplified the need for a regional transportation agency.

BART has affected the role of MTC by providing a basis for Federal funding and increased staffing (through the BART Impact Program and BART extension and coordination studies) and causing a shift in emphasis from planning to operations performance evaluation (by responding to the increasing demands from the State Legislature for BART deficit funding justification). The activities of MTC in the areas of operations performance evaluation and Federal and State funding allocation have, correspondingly, had a significant impact on BART.

## 4. COMMUNITY ORGANIZATIONS

### BART Had Only A Minor Impact On The Formation And Activities Of Community Groups

Three different types of community groups (representing business, merchants and neighborhoods) each had significantly different expectations of BART. In each case, these expectations dictated how the groups responded to BART.

Business leaders, particularly in San Francisco and Oakland, were the original promoters and developers of the rapid transit concept as a means to improve access and reduce congestion in the Bay Area. These leaders generally represented large corporations with strong ties to the Bay Area and its future. These business leaders were most active during the early stages of BART planning and development, forming special committees to review BART-related issues. Once initial system planning was complete and the BART bond issue approved, these same groups largely ceased any active role related to BART.

Merchants, particularly in the two large central business district (CBD) areas (San Francisco and Oakland), were more cautious about BART's potential than business leaders. They expected few benefits from BART and saw an immediate danger to their businesses from BART construction. These merchants organized temporary groups to protect themselves from construction and only secondarily to try to gain some benefits from BART.

BART had only a limited impact on the formation of new or alteration of existing grass roots community organizations. Of case study areas, only in the urban residential communities of Rockridge (Oakland) and Mission (San Francisco) did community groups reorganize because of BART (in Rockridge) or use BART as a rallying point (in both communities). In both cases, fear due to projections for a significant level of development caused by BART was the catalyst for organizing.

## 5. CONCLUSIONS AND IMPLICATIONS

The overall conclusion of this analysis is that BART had had little or no impact on organization formation, structure and practices in local, regional or State governments or agencies. Further, these same organizations have had only small impacts on BART. Where BART and government organizations did interact, most BART-related issues were handled within existing organization structures or within generally accepted informal arrangements.

A number of reasons were advanced by key informants for the lack of any more significant BART organizational impacts.

- . Local government officials in the Bay Area (with the exception of some development and planning officials) viewed BART as an issue, not an opportunity. These officials generally responded to BART, such as concurring with BART plans, agreeing to BART schedules or developing traffic plans in BART construction areas. Only redevelopment and planning officials initiated specific local plans to take advantage of BART.
- . Organizational charters and bureaucratic structures in the Bay Area's larger cities have evolved over long periods of time and are difficult and costly to change.
- . Local governments reacted to BART in the same manner in which they reacted to any other outside agency, therefore, responding to BART would require no new procedures or staff.

- . In a region characterized by strong local government control, effective regional organizations would not likely be formed just in response to a new regional transit system like BART.

Other metropolitan areas with strong local government controls and the absence of a strong regional governing body can benefit from the organizational experience related to BART. Specifically:

- . Government officials should not expect the formation of a new regional transit district and resulting transit development to cause any change in other governmental structures. It is possible, however, that the same kinds of regional transportation problems that led to the development of rapid transit in the first place could lead to the formation of some form of regional transportation planning capability.
- . Local, regional and state agencies will probably not benefit by altering existing organizational arrangements in any significant way, just to respond to rapid rail transit development. The creation of a transit liaison position during rapid transit construction may be appropriate, particularly in large cities.
- . If regional governmental structures are generally fragmented, as in the Bay Area, rapid rail transit officials should allow for lengthy interaction and negotiation with a variety of local officials.

#### IV. FINANCIAL POLICY

The purpose of this chapter is to determine the impacts of BART construction, debt burden and operations on the budgets and financial policies of local governments and transit districts in the three counties served by BART--Alameda, Contra Costa and San Francisco.

Despite the massive size of the regional general obligation debt for BART (about \$800 million or about equal to one-half the 1964 total outstanding general obligation debt in all California cities), local revenue and expenditure trends in communities which funded BART were no different from trends in other California cities.

Although BART appeared to have no noticeable impact on fiscal trends in communities financing the BART investment, this analysis sought to document more subtle changes in local financial policy in three areas--revenues, expenditures and capital improvements--for local governments and transit districts within the BART service area. Research questions for each of these areas are:

##### Revenue Policy

- . Has the perception of the BART tax rate and the BART debt influenced the willingness of public officials to raise, lower or maintain the local tax rate or alter local revenue policies in general?
- . Has the construction and operation of BART resulted in any changes in the level of local, regional or State revenues for other transit operations within the BART service area?

##### Expenditure Policy

- . Did BART construction and operation have any effect on the level of local operating expenditures or local expense budget policies?

##### Capital Improvement Policy

- . Has BART development resulted in any changes in local capital improvement programs and strategies?

Study findings in each of these three policy areas are presented in the following three sections of this chapter. Overall conclusions and implications are summarized in the final section.<sup>1</sup>

## 1. REVENUE POLICY

### BART's Primary Impact On Revenue Policies Was In Reducing The Amount Of Funding Available For Transit Districts Other Than BART

This section considers the impact of BART on the generation of revenues for and changes in revenue policy of local governments and transit districts in the BART service area. Policies were evaluated for two categories of revenue sources--local revenue and regional and State revenue.

#### (1) Local Revenue

The BART general obligation debt burden and resulting tax rate increase (representing 4% to 6% of the total property tax bill), had no discernible influence on local government or transit district property tax rate decisions or the willingness to provide needed local revenue for transit service. In other words, local property tax rate decisions would have been the same under the No BART Alternative. However, BART has caused some small, yet unmeasured change in total assessed valuation within its service area.

When asked to describe tax rate trends and major factors influencing those trends, local government officials in the case study cities invariably failed to mention the BART debt or tax rate as a factor. Follow-up questioning that explicitly mentioned BART as a possible influence in tax rate decisions also failed to identify any connection between tax rate decisions and the BART tax burden. Major explanations for a lack of a BART impact on local tax rates were:

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<sup>1</sup>For a more detailed discussion of financial policy impacts of BART, see Booz, Allen & Hamilton Inc., The Impact of BART on Local Government Expenditures, Revenues and Financial Policies, Document No. WP-31-8-77 (Berkeley: Metropolitan Transportation Commission, December 1977) for local government financial policies and Booz, Allen & Hamilton Inc., The Impact of BART on Local Transit Service and Financial Policy, Document No. WP-42-8-77 (Berkeley: Metropolitan Transportation Commission, December 1977), for transit financial policies. Also see McDonald & Greife, Inc., The Impact of BART's Bond Issue On Regional Public Financing, Document No. DOT-BIP-TM-27-7-77, (Berkeley: Metropolitan Transportation Commission, August, 1977).



- . The BART tax rate was viewed by public officials as beyond their control or political accountability.
- . Other local factors, unrelated to BART, such as a serious fiscal crisis in Oakland, overshadowed BART as a potential factor influencing tax rate decisions.
- . Significant increases in total tax levies due to inflation have caused local decision-makers to resist increases and even encourage decreases in property tax rates. These decisions have no relationship to BART.
- . The BART tax rate has a low public awareness. According to a 1975 survey<sup>2</sup> only 38% of the voters polled were aware that property taxes subsidized transit. Of those aware of property taxes as a transit funding source, property taxes were ranked as the fourth largest source, although property taxes are actually the largest local revenue source for transit.

BART has had a small effect on the total assessed valuation within its service area. According to the Economics and Finance Project, BART's land acquisition program removed approximately 1,100 acres of land from the tax rolls, representing an average reduction of 0.2% of the property tax base in the three BART counties, a relatively insignificant revenue impact. Most local officials viewed BART as an investment in the region's infrastructure. Therefore, tax losses due to BART property acquisition were expected to be more than offset by development fostered by BART and resulting increases in property values. The Land Use and Urban Development Project is attempting to measure these expected increases in property values due to BART. For example, the construction of a \$30 million Federal Social Security Payments Center in Richmond, partially the result of BART, effectively doubled the assessed valuation in the downtown redevelopment area (the structure is privately owned and leased to the Federal government).

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<sup>2</sup> Tyler Research Associates, The Bay Area Finance Public Opinion Survey, August 1975, p. 17.



(2) Regional And State Revenue For Local Transit

Overall, BART caused a reduction in State and regional funding to other transit operators over what would have been available without BART. Total revenues for transit service in the Bay Area are greater than what would be expected under the No BART alternative. However, AC Transit and MUNI's share (in total dollars) of revenue is most like reduced because of BART.<sup>3</sup>

First, new State and regional funding sources, although created in part to help BART, would have most likely been available in the absence of BART. BART's impact, at best, was to increase the need for State and regional funding and to speed up legislative approval of such funding. Four new types of State and regional transit funding have been initiated since the approval of BART in 1962. BART's role in the approval of these funding sources was as follows:

- . State Highway Funds--In 1974, the state voters approved the diversion of some state highway gas tax funds for approved local fixed guideway transit capital development. The initiation of such a proposal as far back as 1963 was, in part, the result of BART construction and eventual projected deficits. However, BART was not used as an argument in the final proposition debate. Further, the proposal was approved too late to finance BART capital expenditures (except possible system extensions which are now politically unlikely).
- . Sales Tax, Individual District Authorization--In 1969, the State Legislature approved a  $\frac{1}{2}$ % sales tax increase in the BART District counties to provide needed funding for BART capital and later operating deficits. Although BART was the direct cause for this authorization, legislative staff generally agreed that BART did not set a precedent for this type of funding for other transit districts. Other counties have

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<sup>3</sup>See Metropolitan Transportation Commission, The No-BART Alternative Financing Plan, February 1977, pp.5-6.

received similar enabling legislation based on demonstrated need. Therefore, BART county transit operators might have eventually received a similar authorization in the absence of BART.

- . Sales Tax, Statewide--The Transportation Development Act (TDA or SB 325) was approved in 1971 to divert  $\frac{1}{2}\%$  of the existing sales tax for transit-related projects to each county within the State. BART appeared to have little relationship to the approval of this funding source. Rather, projected financial deficits of Los Angeles area transit operators (which do not have the local property tax support available to operators in the Bay Area) appeared to be the primary cause for legislative approval.
- . Bridge Tolls--In 1975, the State Legislature transferred much of the authority for toll setting and the use of toll revenues from the State to the regional level (MTC) for the Bay Area (the only exception is the Golden Gate Bridge). BART had set a precedent through receipt of a one-time-only grant of \$150 million in toll revenue to construct the BART Transbay Tube. Proponents of the 1975 proposal claim it was conceived as a general opportunity to regulate traffic congestion, while providing funding for transit. Debate on the bill did not include BART as an important issue for or against the proposal.

Second, an examination of funding allocation procedures suggests that more State and regional funds (including Federal funds from UMTA Section 5 allocated regionally) would have been available to other transit operators without BART.<sup>4</sup> Two specific cases are:

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<sup>4</sup> Metropolitan Transportation Commission, op. cit., February 1977.

- . TDA Sales Tax Funds--MTC developed an arbitrary allocation formula for the three BART District counties based on the estimated percentage of transit patronage for each operator. Without BART, and assuming no new transit operators in these counties, TDA funding to existing operators would have increased by \$5 million for existing service and \$1.2 million for improved service in 1974-1975, and more in later years.<sup>5</sup>

- . Federal Section 5 Subsidies  
--Federal Section 5 subsidies are allocated to regional areas based on population level and density. In 1974-1975, BART was awarded \$100,000 in Section 5 funds which would be available to AC Transit and MUNI in the absence of BART (the estimated allocation was 40% to MUNI and 60% to AC Transit). Since then, confirmation of BART eligibility for this source of funding has considerably raised its share (e.g., to \$3.5 million in 1977-1978).

Finally, the State Legislature recently approved a measure to provide a permanent source of sales tax funding for BART (AB 1107). This legislation was designed to consider not only BART funding deficits (up to now the only concern of the Legislature) but transit financing for the two other major public transit systems in the three BART counties. The legislation provides a permanent base of funding for BART and allows MTC the discretion to allocate a portion of the sales tax funds to AC Transit and/or MUNI to provide new service within the BART District.

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<sup>5</sup>Metropolitan Transportation Commission, op. cit., February 1977.

## 2. EXPENDITURE POLICY

### BART Had Only A Minor Impact On Local Government Operating Expenditures And Budgetary Policies

This section assesses the impact of BART construction and operations on the operating expenditures and general budgetary policies of local governments in the BART service area. The study examined four main types of local public services to determine if BART was in any way a cause for either increases or decreases in the local costs for these services. The four types of public services considered were:

- . Street maintenance
- . Parking and traffic control
- . Law enforcement
- . Parks and recreation

The study also considered changes in the level of and demand for public services and the relationship of these changes to BART. Where possible, groups affected by changes in service level were identified.

Overall, BART had only a minor impact on local government operating expenditures. The BART District established a general policy to reimburse all local governments for public service expenditures directly related to BART construction and operations. Local decision-makers agreed that BART met this commitment, even though it required a greater than expected outlay of BART funds.

Therefore, the only changes in local expenditures were indirect results of BART construction and operations, and these were few. Specific cases where BART affected local expenditures, by type of public service, are described in the following paragraphs:

#### (1) Street Maintenance

No case study cities incurred additional costs for street improvements and maintenance because of BART. BART often used or crossed existing local street rights-of-way during the construction period. BART agreed to return each of these streets to their former or, in some cases, better condition.

#### (2) Parking And Traffic Control

BART resulted in some minor expenditures for local parking and traffic control. BART has significant adverse impacts on parking and traffic in almost all of the case study cities. These impacts led to some minor changes in local parking and traffic policy as documented

in Chapter VI of this report. However, changes in parking and traffic control resulted in only insignificant additional costs to local jurisdictions which could not be quantified. Typical cost expenditures were:

- . An additional traffic signal at some intersections to accommodate increases in traffic as a result of BART.
- . Additional signing and painted curbing as a means to restrict additional on-street parking caused by BART.

Most local communities with significant BART parking overflow (at five stations with station parking lots and two stations without a BART parking lot) insisted that BART pay for additional station parking, although they were not all successful.<sup>6</sup> The only exception was Daly City, which agreed to provide local matching funds for a Federally funded BART parking garage.

### (3) Law Enforcement

BART has caused no apparent increases in local police patrol near stations or in police department staffing. BART has had little apparent effect on safety or personal security in the vicinity of BART stations.<sup>7</sup> Local police have attributed some small increase in crime near stations to BART. However, these crime increases have usually been small in proportion to crime rate increases in neighborhoods away from BART.

### (4) Parks And Recreation

BART led to some increases in staffing and costs for local maintenance and landscaping. BART is responsible for maintenance and landscaping of its own right-of-way. Local jurisdictions received financial assistance through BART (often Federal grants) to construct recreation facilities, such as linear parks along the Richmond line; landscaping on street and highway medians or BART downtown station plazas, as in San Francisco. Although BART usually provided all or part of the initial funding for such improvements, local governments were expected to assume responsibility for continuing maintenance and landscaping. Specific impacts on local expenditures have been as follows:

<sup>6</sup>For more detail see Gruen Associates and DeLeuw, Cather and Company, Environmental Impacts of BART (Final Report), Document No. DOT-BIP-FR-7-4-77 (Berkeley: Metropolitan Transportation Commission, July, 1977).

<sup>7</sup>Ibid.

- . The City of Oakland is responsible for maintenance of the Grove Shafter highway median, all but the portion directly occupied by BART. The current annual increased cost of this maintenance is \$70,000 over what would have been expected in BART's absence. Although this amount is small in relation to the total \$132 million budget, the amount is significant. For example, in 1971-1972, when Oakland added a total of 17 new positions, the two BART median maintenance positions represented 12% of the staff additions in a budget year in which staff levels in all departments either were held constant or reduced.
- . The City of San Francisco is responsible for maintenance of downtown BART station area plazas which were constructed by the City with Federal and BART funds. The City budgets approximately \$65,000 annually for this maintenance effort.

In some local areas, BART development has also led to an increase in the demand for services. Community groups in the San Francisco Mission District continue to request city funding to maintain small plazas at the 16th Street and 24th Street BART stations. The city continues to deny these requests claiming no need for the service, although it does provide a similar service in BART plazas in the downtown area.

### 3. CAPITAL IMPROVEMENT POLICY

#### BART Caused Some Shifts In Local Capital Improvement Priorities And Allowed Cities To Use New Project Financing Approaches

This section examines to what extent the massive BART debt (about one half the combined general obligation debt for all California cities in 1964) and construction requirements may have influenced:

- . The timing of local capital projects.
- . The willingness of local governments to finance capital improvements with long-term, general obligation bonded debt.

The extent to which BART financing requirements influenced local governments to utilize new revenue or expenditure approaches for funding capital improvements.

BART's impact on capital improvement policy in each of these areas is described in the following paragraphs.

(1) Capital Improvement Priorities

BART's major impact on capital improvement policy was to accelerate the timing of some capital projects that had already been planned. Most of the case study cities took advantage of BART to complete a number of local capital improvement projects. In most cases, these projects were long standing local priorities which were facilitated in some way by BART construction.

For example, San Francisco took advantage of BART's construction along Market Street to implement a long-desired beautification project which most likely would have been completed a lot later and on a much more modest scale under the No-BART Alternative.

Although many capital improvement projects were already local priorities, they would probably have been completed later without BART. BART had no apparent impact on the level of local capital improvement funding. However, the completion of BART-related projects ahead of schedule slightly altered other local capital improvement priorities. In communities such as Richmond, where capital projects resulting partially from BART were not funded locally, no change in capital improvement priorities due to BART was apparent.

(2) Capital Improvement Financing

BART had no discernible impact on public officials' willingness to use general obligation debt to finance local public improvement priorities.

Throughout the BART development period, use of general obligation debt by local governments had continued to decrease. In 1966, the state approved legislation permitting public competition on non-profit corporation bonds.<sup>8</sup> This legislation, as well as increasing voter disenchantment with local bond issues, rather than BART, has been the primary reason behind the tendency away from general obligation debt in Bay Area cities since the late 1960's.<sup>9</sup>

<sup>8</sup> Legislative change allowed local governments to use non-profit corporations to finance municipal improvements using revenue bonds.

<sup>9</sup> McDonald & Grefe, Inc., The Impact Of BART's Bond Issue On Regional Public Financing, Document No. DOT-BIP-TM-27-7-77 (Berkeley: Metropolitan Transportation Commission, August 1977).



Local transit district officials also felt that capital financing was not affected by BART. AC Transit and MUNI bond issues had met voter resistance before BART. For example, an original bond issue for AC Transit failed in 1958, well before BART debt was a local issue. A bond issue for MUNI equipment failed in 1966, but press accounts and key informant interviews did not identify BART as a reason for the failure. MUNI eventually had to form a Municipal Improvement Corporation to fund necessary capital improvements without requiring a bond election.

(3) New Capital Improvement Revenue Sources

In at least two cities, BART has provided an opportunity to obtain new sources of revenue to accomplish local capital improvement priorities. Two types of new revenue sources were used--Federal mass transit grants and tax increment bond financing.

- . San Francisco applied for and received its first Federal mass transit grant (through HUD) to construct extensions to BART station mezzanines and station area plazas. BART construction funds were approved as the local matching share, thereby requiring almost no expenditures by the city.
- . Both San Francisco and Oakland used tax increment financing for projects related to BART within local redevelopment areas. In the 1960's, State legislation introduced tax increment financing as a new source of funding for redevelopment projects. This type of financing allows a jurisdiction to sell redevelopment bonds and use the annual "tax increment" resulting from the appreciated property values in the redevelopment area to retire the bonds. San Francisco used tax increment bonds to finance the Embarcadero BART station at the eastern end of Market Street. Oakland used tax increment bonds to enlarge the City Center redevelopment area.



#### 4. CONCLUSIONS AND IMPLICATIONS

Overall, the financing of BART construction and operations had a somewhat favorable impact on the fiscal position and financial policies of local governments in the BART service area. Alternatively, BART did appear to have some adverse impact on the financing and policies of local transit districts in the BART counties.

Conclusions about BART's impact on local government financial policy are:

- . While BART was a highly visible part of the rapidly rising composite tax rates in the 1960's, the BART debt burden and tax rate did not influence local tax rate or bonding decisions.
- . BART had a favorable impact on local government finances by providing new sources of financing for public improvement projects.
- . BART had a minor adverse impact on local government finances by requiring cities to incur some additional operating expenditures for maintenance caused, in part, by BART.

BART also affected the fiscal position and financial policies of different types of local governments in different ways. For example, BART generally had a favorable financial impact in the downtown core areas of San Francisco, Oakland and Richmond, which established policies to take advantage of BART. Alternatively, BART had a relatively neutral financial impact in suburban areas such as Walnut Creek and Fremont, which had less dramatic needs and did not make as great an effort to take advantage of BART.

Conclusions about BART's impact on the financing and policies of local transit districts are:

- . Although BART was expected to support its operations through fare revenues, it now requires a permanent source of local public financing to maintain its operations. This unexpected public financial burden required additional financial resources for transit within the region over what would have been expected under the No-BART Alternative.
- . Local transit operators (other than BART) seem to have fewer financial resources available than in the No-BART Alternative scenario. Although new revenue sources for transit were approved,

these sources would probably have been available to meet recognized needs of other operators eventually, even without BART. Local transit operators would also have been eligible for additional funds (Transit Development Act and Federal Section 5) in BART's absence, which are now allocated to BART.

The BART experience provides a number of implications for the local financial policies of other jurisdictions considering rapid transit investment. Specifically:

- . Local officials can expect transit debt to constrain local financing plans only if transit financing decisions are made at the local level (which was not the case with BART). Local officials expressed some concern that the high BART debt would injure the bond offerings of small governmental agencies. However, BART debt did not appear to affect local capital financing plans. Consequently, local officials, particularly under the current 80% Federal funding participation in rapid transit construction, should not feel compelled to defer local bond offerings because of transit debt.
- . Local governments can minimize the impact of rapid rail transit on their operating budgets through appropriate agreements with rapid transit officials. BART established a policy to maintain its own rights-of-way and to compensate local governments for projects and services directly related to the construction or operations of BART. A policy of this type will probably increase the cost of the rapid transit system, while providing some amenities to local communities. This may only represent a shift in financial burdens from local governments to the rapid transit district.
- . Rapid transit development can be expected to increase the total ongoing financing needs for transit services within a given region. Any new rapid transit system cannot be expected to support its operations through fare revenues alone. Therefore, system planning should include projections of public funding requirements based on the latest experience with systems like that being planned. If the rapid transit system is to compete with existing transit operators for funding, an effective regional or state authority should have responsibility for allocating available funds to various operators based on regional

and/or state transit objectives. The Federal government should rely on the same regional and state authority to recommend trade-offs for transit capital funding.

In general, the BART experience indicates that rapid rail transit can be used effectively, especially by large cities to further local improvement objectives and benefit local revenues. However, many of the Federal programs to "match" local capital improvement projects no longer exist. Alternatively, in communities with independent transit operators, these operators will most likely be required to compete with rapid transit for operations financing.

## V. LAND USE AND DEVELOPMENT POLICY

This chapter assesses the relationship between BART and local land use policy in BART-served communities. Further, the chapter explores the effect of BART-induced land use policy on actual changes in land use and development of these communities.

BART planners originally outlined the system's major potential benefits as improved accessibility, enhanced environmental quality and greater economic vitality in urban areas. During the 1960's, local officials expected these travel, environmental and economic benefits to accrue in all communities served by BART. These benefits, in turn, were expected to significantly affect land use and development--particularly near the stations (the "proximity" effect) but also throughout the BART-served communities (the "accessibility" effect). As actual BART operations began in the 1970's, however, many of the high expectations for land use and development changes had not been met. Local officials have now become more realistic about the potential impacts of BART and have publicly lowered their expectations for rapid transit-induced improvements.

For this analysis, four areas of potential relationship between BART and local land use policy were examined. Only local land use policy impacts were considered in that county and regional land use policies were beyond the scope of this study. General policy research questions are:

- . Did local officials and planners play a substantive role in BART system planning and design after 1962?
- . Have local governments conducted studies or revised general plans and zoning in response to expected development opportunities induced by BART?
- . Have local governments planned new or modified existing redevelopment or public improvement projects as a result of BART?
- . Have changes in local land use policy because of BART resulted in actual changes in local land use and development?

Findings for each of these questions can be found in the following four sections. Overall conclusions and implications are summarized in the last section.<sup>1</sup>

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<sup>1</sup>For further details in each of the four study areas see Booz, Allen & Hamilton Inc., The Impact of BART on Land Use and Development Policy, Document No. DOT-BIP-WP 41-8-77 (Berkeley: Metropolitan Transportation Commission, January 1978).

## 1. THE ROLE OF LOCAL LAND USE POLICY IN BART DESIGN

### Local Community Involvement In BART Station Location And Design Decisions Since 1962 Appeared To Be Most Effective In Smaller Suburban Jurisdictions

Most BART station location and route decisions were made prior to 1962 and therefore are outside the scope of this study. However, modifications of selected stations and routes remained serious issues through 1965 and were usually related to local land use policy questions. Many local planners felt that the system configuration would do a great deal to shape the level and type of development which could be expected as a result of BART.

To assess the effect of local land use policy on post 1962 BART planning, the original BART plans approved in 1962 were compared with the eventual system configuration to identify changes. Where changes were made, the process used to effect that change was researched to determine the decision-makers involved and the objectives and cause for such a change.

Although a large number of changes in system configuration were made, only in the smaller case study jurisdictions were local land use policy questions resolved in a timely manner. For the cities of Richmond, Walnut Creek and Fremont, BART altered either route alignment, station location and/or station design to better accommodate local planning objectives. Coordination between BART and local jurisdictions reportedly succeeded because BART was dealing with small and fairly responsive local governments and only a single BART station and connecting line were the subject of negotiations.

Alternatively, in the large urban core case study areas, land use policy changes during the BART design and engineering phase were sometimes felt to be too little and too late. For these cities (San Francisco, Oakland and Berkeley), political environments were more complex and larger and slower moving governmental structures focusing on multiple station areas had more difficulty coordinating decisions and capitalizing on opportunities. For example:

- . San Francisco was unable to implement a planned project to raise transit mezzanines so shopping areas could be added.
- . San Francisco constructed an additional BART station (Embarcadero) at local rather than BART expense because of slow and uncoordinated city action resulting in its exclusion from initial system plans.
- . BART was not able to incorporate some of Oakland's desired station and plaza modifications.

- . Berkeley had to pass a local bond issue to pay for the additional cost to build BART underground rather than at-grade and has had difficulty in coordinating other land use policy issues dealing with BART.

## 2. LOCAL PLANNING AND ZONING POLICY

### BART Had Some Impact On Local Planning And Zoning Policy In Each Of The Case Study Areas

General Plans and Zoning Maps have traditionally been the most direct expression of a local government's land use policy. This research assessed whether any changes in these documents would have been different under the No-BART Alternative. Three types of planning and zoning policy changes by local jurisdictions were investigated:

- . Special planning studies and subsequent amendments to the General Plan.
- . Zoning Map changes.
- . The initiation of special development controls or incentives.

#### (1) Special Planning Studies And Amendments To The General Plan

High expectations of BART's impact on land use and development resulted in the initiation of special planning studies and General Plan changes in each of the case study cities. Examples of these studies, the reasons for their completion and their effect on the local planning process are discussed in the following paragraphs.

Special BART station area studies were conducted by most suburban and urban residential communities along the BART corridor (as well as in all of the case study cities). These studies were usually funded through U.S. Department of Housing and Urban Development (HUD) general planning grants (section 701). Local planners often initiated such studies as a response to community or business groups concerned about the possible impacts of BART on their neighborhood or business. Although some of the reasons for initiating studies were protectionist, most local planners viewed the arrival of BART as an opportunity to redirect land use in a particular station area. Typical examples of station area studies include:

- . Rockridge neighborhood--Two station area studies were conducted to determine a range of alternative planning objectives for the one quarter to one half mile area surrounding the BART station. These studies outlined the significant development potential of the already developed area, contributing to already increased community involvement in planning to restrict the expected high level of growth and protect the neighborhood from high density development.
- . City of Fremont--This city initiated a station area study which also predicted a significant level of development as a result of BART. Unlike Rockridge, Fremont was dealing with an undeveloped area and adopted a General Plan amendment quadrupling the allowable densities and establishing a minimum density "floor," thereby precluding low density development within one quarter mile of the BART station.

BART station area studies had two apparent impacts on local planning processes. First, these studies and their usually high expectations aroused increased citizen interest in community land use issues. In specific residential areas of all case study cities except Fremont, the majority of citizens desired to protect their residential communities from development projected to result from BART. Second, the initiation of BART station area studies often led to more comprehensive area plans for a particular community.

Rapid Transit Corridor Studies were also conducted in the two urban case study cities--San Francisco and Oakland. These studies included local economic analyses which consistently projected significant increases in demand for commercial and residential development near BART. The significant development resulting from recent rapid transit projects in Toronto and Cleveland was often used as a basis for projections in these studies. Typical examples of corridor studies with varying results are:

- . Oakland--The Redevelopment Agency conducted a study in the designated rapid transit corridor. This study



became the basis for downtown plans and the expanded City Center Redevelopment Project area linked to the 12th Street BART station.

- . San Francisco--The General Neighborhood Renewal Plan for the rapid transit corridor area recommended redevelopment activity to be coordinated with rapid transit development in the Mission District. Community groups initially pushed the city to complete the study. However, control of the community shifted to different groups which opposed the plan and it has not been implemented.

Recommendations of these types of corridor studies were sometimes adopted as part of a local General Plan (San Francisco CBD and Oakland CBD). The studies more often became the basis for Redevelopment Project plans or plan modifications. Some of these plans were adopted and led to funded projects (Oakland CBD), others led to modified projects (Richmond and San Francisco CBD) and others were never adopted (San Francisco Mission District).

Other planning activities were also affected by BART. Local planners tended to view BART as an investment and long term opportunity, compared with most local officials who often viewed BART as a short-term problem or issue. Therefore, BART was considered an important input in long-range planning processes, particularly in San Francisco. Examples of general planning activities in response to BART are:

- . San Francisco--BART's impact on planning activities was most evident here, where the adopted downtown plan was modified to include increased densities near BART. Planners also proposed BART as a tool to help the CBD expand across the existing transit spine (Market Street) so that development pressure could be directed from the Chinatown, Nob Hill and North Beach/Jackson Square areas. In addition, San Francisco's housing element called for increased residential densities near BART stations, the urban design element called for increased heights



and development near BART stations and the transportation element called for further restrictions in CBD parking due to increased transit capacity.

- . Oakland--BART alignment and station location were included in the 1966 Oakland Central District Plan and the plan included many references to the BART configuration.

In each of the seven case study areas, increased densities and height limits near BART were recommended actions in local General Plans.

## (2) Local Zoning Policy

BART-related planning studies resulted in some changes in zoning near BART in each of the case study communities. The type of zoning change implemented varied greatly depending on the development expectations and community goals in the neighborhoods surrounding BART lines and stations. The general types of zoning changes were:

- . Upzoning--The largest increase in allowable density caused by BART occurred in the San Francisco CBD along the Market Street transit spine. This policy change was enhanced by subsequent decreases in allowable densities elsewhere in the CBD (particularly in established residential/commercial areas near the Financial District). Zoning changes in other CBD areas were not as dramatic, partially because allowable densities already exceeded the existing level of development.

Densities were also increased in the two suburban communities of Fremont and Walnut Creek, but the lack of adequate market demand has not allowed either community to fully achieve its development objectives. Further, subsequent community opposition in Walnut Creek caused later reductions in allowable densities near BART.

- . Downzoning--Two urban residential communities (Rockridge in Oakland and Mission in San Francisco) successfully influenced local planning officials to decrease allowable densities near BART stations. Both local planning departments conducted special studies projecting significant development and considered land use policies to encourage development or mitigate impacts of development in these neighborhoods. However, neighborhoods supported lower levels of development and both cities eventually reduced zoning to prevent high density development.

BART usually caused a change in local zoning policy by providing a focal issue around which community groups and business leaders could organize to achieve their objectives.

### (3) Special Development Controls Or Incentives

Special incentives and controls were often adopted for areas near BART stations. These types of land use policy tools were used to achieve special local objectives not made possible through changes to the General Plan or Zoning Map or to reinforce other land use policy changes. Two general types of incentives and controls (zoning incentives and development review procedures) were used. Significant examples are:

- . Zoning Incentives--The best example of zoning incentives can be found in San Francisco. Here, significant reductions in required parking and increases in allowable floor area ratio were granted to developments located near BART or providing a direct physical connection to BART.

In Walnut Creek, zoning was initially modified to encourage high rise development near BART stations by reducing the parking space requirements in relationship to building height.

- . Development Review Procedures--The City of Oakland altered its planing process to allow community review

of land use policy and development proposals in the Rockridge neighborhood. This change was a direct result of community concern over BART's expected impact.

In San Francisco, special discretionary review guidelines have been established for beautification efforts along the full length of Market Street. Similar review procedures are being considered by the Mission and Walnut Creek communities.

These two types of special incentives and controls were initiated at least in part due to BART. They also set new precedents for planning policy in each of the communities affected.

### 3. REDEVELOPMENT AND PUBLIC IMPROVEMENT POLICY

#### Local Redevelopment And Public Improvement Policy Changes Were The Most Dramatic Impacts Of BART On Local Land Use Policy

Joint local government/transit district development is a second major category of land use policy available to local jurisdictions. Local Redevelopment Agencies were usually responsible for joint development policy actions. The institutional independence of these agencies throughout the 1960's allowed them to approach BART in a more entrepreneurial way than local planners could. Therefore, a number of significant impacts of BART resulted, particularly in the three cities (San Francisco, Oakland and Richmond) with active Redevelopment Agencies.

Three areas of joint development policies were addressed in this analysis:

- . Local redevelopment policy
- . Public improvement policy
- . Joint development marketing policies

#### (1) Redevelopment Policy

One of the most important local land use policy changes due to BART was on public redevelopment projects --their design, financing and marketing. In particular:

- . Design--Redevelopment projects were modified or expanded to provide for direct connections to BART.

- . Financing--BART enhanced the financial feasibility of local redevelopment projects by qualifying as a source of local matching funds for Federal redevelopment grants. Although BART did not actually help fund these projects, it did increase the leverage of the Redevelopment Agency in obtaining Federal funds.
- . Marketing--Redevelopment Agencies have actively used BART as a marketing tool through its presentation in brochures and other sales materials. However, agency marketing related to BART appears to have been most effective with Federal clients who are subject to the General Services Administration site selection criteria which give heavy emphasis to public transit system access.

BART was also used as a reason to initiate an additional redevelopment project in the San Francisco Mission District which would not have been considered without BART.

Suburban areas experienced no public redevelopment efforts as a result of BART. This result was expected due to the lack of any ongoing redevelopment program.

## (2) Public Improvement Policy

Some cities took advantage of BART development by initiating public improvement projects to coincide with BART construction, as shown in Exhibit II. These projects and their financing are discussed in more detail in Chapter IV of this report.

## (3) Joint Development Marketing Policy

Although local redevelopment agencies have all used BART as an element in their development marketing strategy, the campaigns have generally not been successful in attracting new development. Transit access is generally viewed as relatively minor in most commercial or industrial location decisions.

One major exception has been the market for Federal government construction, because of the General

EXHIBIT II  
PUBLIC POLICY PROJECT  
BART-RELATED LOCAL  
PUBLIC IMPROVEMENT PROJECTS  
CASE STUDY AREAS

BEAUTIFICATION

<u>Project</u>	<u>Total Cost</u>
. Oakland--Broadway street beautification	\$ 1 million
. San Francisco--Market Street beautification	\$ 35 million

BART STATION PLAZAS

. San Francisco--mezzanine extensions and three station plazas	\$ 40 million
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RAPID TRANSIT STATION

. San Francisco--Embarcadero BART/MUNI Station	\$ 36 million
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STREET IMPROVEMENTS

. Fremont--parking lot, street widening and extensions, grade separation	not known
. Oakland--street widening and construction	not known
. Richmond--grade separations and street widening	not known
. Walnut Creek--street widening and intersection improvements	not known

Services Administration preference for sites with transit proximity. Examples of new Federal development related to BART are:

- . Social Security Payments Center located near the Richmond station.
- . Energy Research and Development Agency, leasing considerable space near the Oakland 12th Street station.

BART has also had a positive, although less significant impact on the marketing of development projects for other public jurisdictions. For example:

- . Medical clinic at the Richmond station.
- . A new junior college at a downtown Oakland station and one proposed for a downtown Berkeley station.
- . County office buildings at the Richmond, Fremont and Oakland stations.

Interviews with developers and local planners suggest BART has played a much more limited role in joint development marketing with respect to private developers of hotel, convention, high density residential and regional retail uses. BART was not as significant in attracting new development as most other marketing factors such as environment, land availability and highway access.

#### 4. THE RELATIONSHIP OF BART TO CHANGES IN LAND USE AND DEVELOPMENT

##### Local Land Use Policy Changes Because Of BART Have Caused Some Noticeable Changes In Local Land Use And Development

High expectations for development resulting from BART in case study jurisdictions were the primary cause for a variety of local land use policy actions described in the previous two sections. This section considers the actual changes in land use in these communities to date and examines the role of local land use policy in these changes.

Local land use policy changes caused by BART have had a significant impact on the nature and extent of local land use changes. The following paragraphs present the types of land use changes resulting from planning and zoning policy and redevelopment and public improvement policy.

Planning and zoning policy changes related to BART have both encouraged and discouraged changes in development near BART. Development changes depended largely on the extent of market demand and the degree to which policy controls were matched with incentives.

Only in the San Francisco CBD have incentives and restrictions been balanced in an environment of substantial office/commercial demand. In this setting, zoning changes have had the most impact on actual land use changes. The growth of San Francisco's Financial District in the direction of established residential/commercial neighborhoods has been prevented. At the same time, \$1.5 billion of office expansion has been directed into areas south of Market Street and near the BART stations which were previously viewed as less desirable by developers. While other factors have been important in influencing this development, zoning has played a critical role. Under the No-BART Alternative, the Board of Supervisors may well have been pressured by developers not to restrict development in the North Beach area (the vote was only 6 to 5 in favor of restrictions with BART as a strong argument). If the vote had gone the other way, development would more likely have located to the north, not south, of Market Street. There is considerable disagreement on BART's role in this decision.

Where market demand was not present, or where incentives were not combined with restrictions elsewhere, effects of BART-related zoning changes on land use and development have not been significant.

- . In Walnut Creek (where market demand for office construction has not yet met projections), a ten-story office building was built in 1972 with the benefit of zoning incentives adjacent to BART, but little has happened since and the zoning incentives have now been removed.
- . In Oakland (where the market was weakened by existing surplus space and where restrictions on areas outside the CBD were not as effectively implemented due to political pressure to allow development) zoning has had little, if any, effect on downtown development.
- . In the Richmond CBD, early attempts to encourage office/commercial and residential development near BART were discouraged by parallel efforts to encourage the same type of development in a vacant available area near the freeway and away from the CBD. The market for private development has been slow, no zoning changes were adopted and little development has occurred.

In areas where moderate market demand developed, but where substantial community opposition existed, early efforts to encourage development through zoning were reversed. The more restrictive controls adopted have so far succeeded in preserving the existing



neighborhood scale. They may also have prevented or redirected limited development that otherwise would have occurred. This was particularly true in the Mission and Rockridge neighborhoods and it was also reportedly true in Berkeley.

Redevelopment and public improvement policy changes have also encouraged land use changes near BART. Local joint development policies have affected land use where market demand was strong as well as weak.

In San Francisco, where development policy was accompanied by strong market demand, major impacts on land use can be traced. The \$35 million Market Street Beautification Project, made politically and financially feasible by BART, is continuing to have major impacts on land use. It has reportedly been responsible for expediting the growth of the Financial District to the large supply of developable land to the south side of Market Street and beyond. In addition, the expanded redevelopment projects, plus the tax increment financed Embarcadero BART station, have provided inducements to development near the two BART stations affected (Powell and Embarcadero). However, delays in the Yerba Buena Redevelopment Project have also delayed construction of a BART connection at Powell.

In Oakland and Richmond, development policy was not accompanied by strong market demand, yet effects were still significant. For example, in Oakland, BART local credits provided financial support for an expanded City Center Project (which has now been responsible for two major office buildings downtown) and a Peralta College Project (which has now been responsible for the location of a major college campus near downtown and BART).

In Richmond, BART "local credits" provided financial support for grade separated railroad crossings (which broke the "iron triangle" of tracks surrounding downtown) and for the downtown redevelopment project (which, with aggressive joint development marketing, has now been responsible for the \$30 million Social Security Payment Center as well as other office and residential construction in the CBD).

In both Richmond and Oakland, CBD investments have restored some private confidence in the downtown, but plaza and beautification improvements were too minor to have significant impact on surrounding land uses.

In other jurisdictions studied, joint development policy was restricted primarily to street improvements and parking facilities, which have affected immediate station area land use, but which had little effect on surrounding uses.



## 5. CONCLUSIONS AND IMPLICATIONS

Overall, BART has already had a significant impact on local land use policy in the five case study cities. Further, these changes in land use policy have, in some cases, played a noticeable role in affecting the pattern of land use and development in the BART-served communities.

Although BART has had an important impact on land use policy, other economic and political events were also instrumental in these changes. Due to the subtleties and lack of documentation of public policy decision processes, it is difficult to isolate the impacts of BART from impacts of other events.

Despite this uncertainty, the study findings led to five general conclusions about the impacts of BART on land use policy and, further, on land use and development changes.

- . Local land use policy actions related to BART station location and design decisions since 1962 have been characterized as too little, too late in the larger Bay Area jurisdictions studied.
- . Early projections of BART impacts on land use may have been overestimated, consequently, necessary supportive local land use actions were not always implemented.
- . BART had significant impacts on land use policy in each of the case study jurisdictions, particularly on planning studies and subsequent public improvement or redevelopment policy.
- . Local land use policy changes related to BART have, in some cases, facilitated subsequent land use changes. This is particularly true of redevelopment and public improvement policy. In other cases, local land use policy changes related to BART, particularly zoning, have restricted land use changes.
- . Land use and development expectations of BART have been met only in the San Francisco CBD, in part due to supportive land use policy, but more due to market demand and other economic factors less related to BART. The extent to which changes can be credited to BART is not very clear.

The BART experience provides a number of lessons for other communities interested in using rapid rail transit to achieve local land use and development objectives.

Rapid rail transit investments represent opportunities to affect land use and development, but do not automatically create new development patterns. Local policy-makers must decide whether and how to take advantage of these opportunities. They must also be prepared to aggressively use local land use policy to achieve their objectives. Two strategies likely to be effective in different situations are:

- . Where communities choose to prevent intensive transit-related development and preserve existing patterns, a combination of restrictive zoning and neighborhood conservation strategies will probably be effective.
- . Where communities desire to use rapid rail transit to encourage intensive development in selected areas, adequate aggregate market demand must be accompanied by a broad range of supportive land use policies applied in a timely and decisive manner. Without adequate aggregate market demand, supportive land use policies alone will probably have little effect on development activity. Without supportive land use policies, rapid rail transit investments alone will probably have little effect on development patterns.

Appropriate supportive land use policy actions include:

- . Realistic projections of land use and development are needed to determine the location of demand potential and opportunities for targeting public policy actions.
- . Broad-based planning studies are important as a vehicle for developing consensus and involving important elements of the residential and business communities.
- . Responsive rezonings are needed to encourage appropriate development near mass transit and possibly to discourage development from locating away from mass transit.
- . An effective system of special development incentives and controls may be needed to encourage specific relationships of development to mass transit.
- . Cost-effective public improvements are needed to provide a supportive environment for development and to demonstrate a public commitment to the area.

- . Redevelopment and land acquisition policies are critical in both developed and underdeveloped areas if adequate parcels are to be assembled to encourage development without causing hardships. However, redevelopment funds are no longer available in the same form as in the 1960's (i.e., matching grants) and block grants tend to be distributed to smaller scale and shorter term projects.
- . Joint development marketing can be an effective tool for influencing site location decisions. But this marketing must represent more than good faith bargaining, and it needs to be supported by other government policies which offer suitable incentives.

Special assistance or incentives may also be needed to assure that policy-makers have a more solid basis of action and choice of tools than did the Bay Area communities in the 1960's. This need for incentives is likely to represent a serious challenge since many of the incentives of the 1960's are no longer available (matching redevelopment funds, public improvement and land acquisition grants, HUD Section 701 planning grants, etc.).

In all, local land use policy can be effectively used to meet local development objectives for rapid rail transit investments. But land use policy actions must be part of coordinated local strategy and accompanied by appropriate market and economic conditions.

## VI. TRANSPORTATION POLICY

This chapter assesses the impact of BART system construction and operation on public policies related to other elements of the Bay Area transportation system.

One of the primary objectives of BART was to reduce congestion in the Bay Area's major transportation corridors and improve accessibility to major employment centers. BART was expected to be a key element in a comprehensive regional transportation system. Achievement of these objectives required coordinated local policy actions of transit and governmental organizations and State highway planners.

Four areas of transportation policy were chosen for this analysis and BART-related policy actions were assessed. These four areas and the relevant policy research questions are:

- . State Highway Planning Policies--Has the planning and development of BART resulted in any changes in the State highway planning process or highway development policies for the Bay Area?
- . Local Transit Operating Policy--Did BART cause changes in the provision of existing local transit operations to effectively integrate them with BART operations?
- . Local Transit Planning Policy--Did BART cause the formation of new transit systems to serve BART stations?
- . Local Traffic And Parking Policy--Did BART-related changes in local traffic congestion and parking availability result in any changes in local parking and traffic policies?

Study findings in each area are presented in the following four sections. The final section summarizes overall conclusions and implications of this research.

# 1. STATE HIGHWAY PLANNING POLICY<sup>1</sup>

## BART Has Caused No Dramatic Changes In State Highway Facilities, Plans Or Policies

The Bay Area contains a major system of State highways which, prior to BART operations, was the primary regional transportation system. The BART system was originally expected to reduce the need for expansion of the Bay Area's highway network. This section assesses the impact of BART on highway planning policy and construction in the Bay Area.

Currently, the planning, development and operation of the Bay Area highway system is a State responsibility through the California Department of Transportation (CALTRANS). Prior to the formation of CALTRANS in 1973 as a multi-modal transportation agency, highway planning and operation was the responsibility of the State Department of Public Works, Division of Highways. The State Highway Commission is responsible for overall State highway policy.

Expectations of BART's role suggested the analysis of two major areas of BART impacts on highway planning and policy:

- . Proposed changes in highway facility planning and construction in the Bay Area as a result of both BART construction and BART operations. Highway facilities include the physical components of highways such as lanes, medians, ramps, fencing, etc.
- . Changes in highway planning policy in response to BART, in terms of both general highway planning policies and specific agreements for joint highway/transit development.

### (1) The Impact Of BART Planning On Highway Facilities

BART has not directly caused any cutback in State highway development, although BART has caused alterations in the timing and width of five State highways in the Bay Area (see Exhibit III).

Changes in State highway plans for the Bay Area were identified by reviewing results of the "unadoption process" used by CALTRANS to abandon certain highway

<sup>1</sup>For more detail on the findings presented in this section, see Booz, Allen & Hamilton Inc., The Impact of BART on State Highway Plans and Policies, Document No. DOT-BIP-WP-30-8-77 (Berkeley: Metropolitan Transportation Commission, October 1977).

EXHIBIT III  
PUBLIC POLICY PROJECT  
IMPACT OF BART PLANNING ON STATE HIGHWAY FACILITIES

Facility	Location	BART Impact	Comment
1. State Route 24 (existing)	Contra Costa County	<ul style="list-style-type: none"> <li>Four to six lane facility widened to eight lanes for 7.2 miles earlier than originally planned to take advantage of cost savings by coordinating construction with BART.</li> <li>Median widened from 40 to 80 feet throughout 7.2 miles to accommodate BART line and out 500 feet at Orinda to accommodate BART station and parking lot.</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities for cost savings for state (CALTRANS) by coordination of construction with BART allowed a wider eight lane highway earlier than planned.</li> </ul>
2. I-280 (existing)	San Francisco County	<ul style="list-style-type: none"> <li>BART tunneled under existing freeway at San Jose Avenue.</li> <li>Transit line constructed on highway right-of-way adjacent to existing freeway.</li> </ul>	
3. I-80 (existing)	City of Richmond	<ul style="list-style-type: none"> <li>BART constructed a sufficiently long tunnel under existing freeway to allow eventual expansion of freeway from six to eight lanes.</li> </ul>	
4. Grove Shafter Freeway (partially completed)	City of Oakland	<ul style="list-style-type: none"> <li>Construction of eight lane facility delayed 18 to 30 months due to BART/CALTRANS coordination.</li> <li>3.5 miles of freeway was widened to provide 40-foot BART right-of-way in the median.</li> <li>Ramps and the median were altered at the Grove Shafter MacArthur freeway interchange.</li> </ul>	
5. I-580 Extension (planned)	Alameda County	<ul style="list-style-type: none"> <li>Final designs of ten mile extension halted to study potential BART use.</li> <li>Actual construction delayed six to seven years.</li> <li>Highway widened to provide 40-foot right-of-way for potential transit development.</li> </ul>	<ul style="list-style-type: none"> <li>BART does not occupy this corridor (extension not approved). Future approval of any extension here doubtful.</li> </ul>

plans. At least nine main routes in the Bay Area were abandoned through this process. These cutbacks in highway construction were all due to cost pressures and local political opposition, not BART.

The only possible exceptions are the discontinuance of study on Route 61 as a connection to the proposed Southern Crossing bridge, as well as the Southern Crossing itself. In this case, the argument, "Let's give BART a chance" was usually prominent in statements of opposition to the Southern Crossing bridge bond issue in 1972, which was subsequently defeated by public vote. However, voting trends by county for this issue bear no relationship to BART proximity, suggesting reasons other than BART for the defeat of the Southern Crossing proposal.

BART was partially the cause for alterations in five State highway facilities as outlined in Exhibit III.

- . BART affected three existing highways (State Route 24 in Contra Costa County, Interstate 280 in San Francisco and Interstate 80 in Richmond) by requiring widening of the medians for transit development or tunneling under highway rights-of-way.
- . BART significantly delayed the construction of two planned highway facilities (Grove Shafter Freeway in Oakland and Interstate 580 extensions in Alameda County) to allow planning for expected BART development.

(2) The Impact Of BART Operations On Highway Facilities

BART station area traffic in at least two locations (Pleasant Hill and El Cerrito) was partially responsible for improvements in nearby State highway facilities. However, increases in peak period traffic at these locations were only partially due to BART and some type of improvement would have been required without BART. Station area traffic problems appear to be related more to other local factors than BART and are best handled by changes in local streets rather than State highways.



(3) The Impact Of BART On General State Highway Planning Policies

General State highway policies with respect to BART provide some guidance for transit-related highway planning and were occasionally used by staff, but they were never formally adopted by the Highway Commission. These policies are outlined in two documents prepared by CALTRANS staff.<sup>2</sup>

An important element of the first policy statement is its heavy reliance on a vaguely defined urban transportation planning process to accomplish any coordination between transit and highways. The identification of possible corridors for joint highway/transit use is left to regional and local planning processes, not the Division of Highways. The policy statement does not specify direct resource allocations or procedures related to BART, or mass transit generally. At most, BART's impact on highway policy, as reflected in this document, is vague and general.

More specific guidelines outlined in the second document generally serve to regulate mass transit so that highway developments are altered to the least possible extent. Examples include defining the median as the preferred transit location to minimize highway access disruption and allowing the Highway Commission to make the final determination on rapid transit occupation on highway rights-of-way.

(4) Policy Agreements On Joint Highway And BART Development

Four agreements established between BART and the Department of Public Works (now CALTRANS) from 1962 to 1969 represent specific BART-related policies. These agreements govern responsibilities of BART and the State for costs, payments, property rights and contingencies for joint transit/highway development.

Interviews indicated that BART/State agreements were largely unique and were not based on past State agreement guidelines. Both negotiators relied on previous agreements with cities, utilities and railroads only to alert themselves to general terms, conditions

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<sup>2</sup> The first, more general policy statement is summarized in a September 29, 1970, memorandum from James A. Moe, previous Director of Public Works, to James M. Hall, previous Director of the State Business and Transportation Agency; the second, more specific policy statement is found in Circular Letter 71-9, Highway Project Development, General File No. 24, issued February 4, 1971.



and legal constraints. Principles derived and approved in the first agreement (Grove Shafter Freeway) served as guidelines in later agreements.

An analysis of the agreement provisions and interviews with participants in the negotiating process suggest that State preferences rather than BART's were generally followed. The State's negotiating position prevailed in each of three major contested issues--land title rights; allocation of necessary landscaping, construction and fill costs; and financing arrangements.

The agreement outcome favoring the State's interests over BART can, in part, be explained by the preferences and style of individual negotiators, the lack of an effective outside constituency for BART and the State's position of strength through its ability to proceed with development without BART.

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In summary, BART planning and operations caused only minor changes in State highway facilities. However, BART did affect State highway policy through specific agreements on highway/rapid transit development.

## 2. LOCAL TRANSIT OPERATING POLICY<sup>3</sup>

### Policy Actions By Existing Local Transit Operators Aided BART Access But Did Not Meet Planners' Expectations

BART system planners viewed service coordination with existing transit operators as an important objective to enhance the viability of BART. This section assesses the impact of BART on service, fare, transfer and personnel policies of existing transit operators in the BART service area. Particular attention is paid to the coordination process used by BART and these transit operators and its effect on resulting transit policies.

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<sup>3</sup>For more detail see Booz, Allen & Hamilton Inc., The Impact of BART on Local Transit Service and Financial Policy, Document No. WP-42-8-77 (Berkeley, Metropolitan Transportation Commission, December 1977).

BART planners outlined a need for feeder service to BART, particularly at outlying station areas. Integration with existing operators was viewed as a necessary ingredient to achieving the objective of a comprehensive transit system. From 1964 to 1967, the Bay Area Transportation Study Commission (BATSC) sponsored a Federally funded transit study known as the Northern California Transit Demonstration Project (NCTDP). This project was designed to identify an appropriate configuration of transit service in the Bay Area as a result of BART. The recommendations of this initial coordination study were debated at length by AC Transit and MUNI, the two major local transit operators in the BART service area. MTC funded an additional BART coordination study for each operator in the period 1972-1974.

This analysis focused on changes in policy in response to BART of the two primary BART service area transit operators:

- . Alameda-Contra Costa County (AC) Transit--the major East Bay carrier and an independent transit district, provides access to 20 BART stations and parallels BART on a number of routes, including transbay service to San Francisco.
- . San Francisco Municipal Railway (MUNI)--the primary local system operated by the City/County of San Francisco, provides access to nine BART stations and some parallel service.

The impact of BART on the policies of Greyhound, the other primary transit operator in the BART service area, was beyond the scope of this study.

BART's impact on the policies of these local operators was examined in three areas:

- . Route and schedule policy
- . Fare and transfer policy
- . Wage and fringe benefit policy

(1) The Impact Of BART On Route And Schedule Policy

Although comprehensive studies were conducted and numerous meetings held, recommendations for major service and route changes to coordinate with BART were not generally implemented. Proposed route alterations to provide feeder service to BART were generally implemented, whereas proposed reductions in routes or service levels paralleling BART were generally not implemented.<sup>4</sup> Certain characteristics of the coordination process were the primary causes for this outcome:

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<sup>4</sup>Peat, Marwick, Mitchell & Co., BART Impacts On Highway Traffic and Transit Ridership, Document No. DOT-BIP-TM-20-3-76 (Berkeley: Metropolitan Transportation Commission, May, 1977).

- . Managers of both transit operators (AC Transit and MUNI) were skeptical of analytical results presented by the demonstration project. Neither believed that actual BART ridership would be as high as projected and were unwilling to base their service level decisions on such projections.
- . At least one operator (MUNI) appears not to have had a planning or other staff resource like that of BART at the time service recommendations were developed. Therefore, the development of counter-proposals and individual plans was delayed.
- . The forum for negotiation was inadequate to reach compromise. There were no incentives for bargaining and compromise in early coordination meetings between operators. No third party was available to play the role of mediator and provide some incentive for operators to reach some resolution of their differences (MTC did start to play this role later in the process after BART service had already begun).
- . Negotiations never directly addressed the projected adverse financial impact of route and schedule changes to coordinate with BART on the existing operators. No discussion of compensation to existing operators took place. This shortcoming is an important reason for the operators' low level of cooperation.
- . No evident public constituency supported coordination attempts. Public groups were sometimes vocal in opposition to recommendations for reductions in local transit service because of BART, thereby increasing the difficulty of implementing such plans. Press coverage was generally noncommittal and activity of outside interests was low or nonexistent.

- . In the case of San Francisco's MUNI, the cumbersome procedures<sup>5</sup> required to reduce or abandon any transit route or schedule impeded any implementation of coordination study recommendations.

(2) The Impact of BART On Fare And Transfer Policy

Local transit operators agreed to an interim transfer system with BART, but BART had only a small impact on transit operator fare policies.

Fare and transfer policy issues were addressed in the same forum as route and schedule policy issues (i.e., based on recommendations of the demonstration project and subsequent coordination studies), followed by discussions between BART/AC Transit and BART/MUNI. Characteristics of that forum described in the previous section (e.g., skepticism about BART ridership projections, possible lack of staff resources, lack of an effective bargaining forum and lack of outside interest pressures) all detracted from the operators' efforts to reach some agreement on fare and transfer policy as well.

Key informant interviews suggested that transfer policy was viewed quite differently from route and schedule policy in discussions among operators. The demonstration project recommended a complex system of two-way transfers that would have been difficult to implement as well as difficult for the public to understand. However, unlike route and schedule policy discussions, where both AC Transit and MUNI felt no need to compromise with BART, operators felt the need to devise some sort of transfer system with BART. Both operators wanted a transfer scheme, but that required money changing hands and purchase of transfer equipment, necessitating some agreement between operators on cost sharing.

BART negotiated separate transfer agreements with AC Transit and MUNI.

- . The AC Transit transfer system allows BART passengers to obtain a ticket at BART stations for a free AC Transit trip away from BART. The ticket must be used on buses departing from a BART station.

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<sup>5</sup>MUNI service reductions required hearings before and approval of the Public Utilities Commission as well as the Board of Supervisors.

- . For MUNI, a two-way system was adopted where two transfer tickets are sold in BART stations for 25¢ to complete a patron's journey on the MUNI system.

Although a transfer agreement was reached about the time BART revenue service began, the transfer systems agreed to are considered "interim solutions". Operators interviewed agreed the systems should be altered in the future. The basic problem appears to stem from the BART fare equipment itself, which is inflexible to modifications for transfer purposes. A committee of representatives of the three operators is currently studying new types of equipment for AC Transit and MUNI and possible modifications to BART equipment as a way to improve the current system.

BART was one of many reasons for AC Transit's decision to abandon its zone fare policy for inter-East Bay trips. AC Transit found its average trip length had declined significantly after BART startup and routing changes. Shorter feeder trips to BART more than replaced patronage losses in regular line-haul trips, paralleling BART service. Thus, AC Transit abandoned the local zone system in July 1974. There are apparently no other occasions before or after BART startup when AC Transit experienced such a marked decline in trip lengths.

(3) The Impact Of BART On Transit Wage And Fringe Benefit Policy

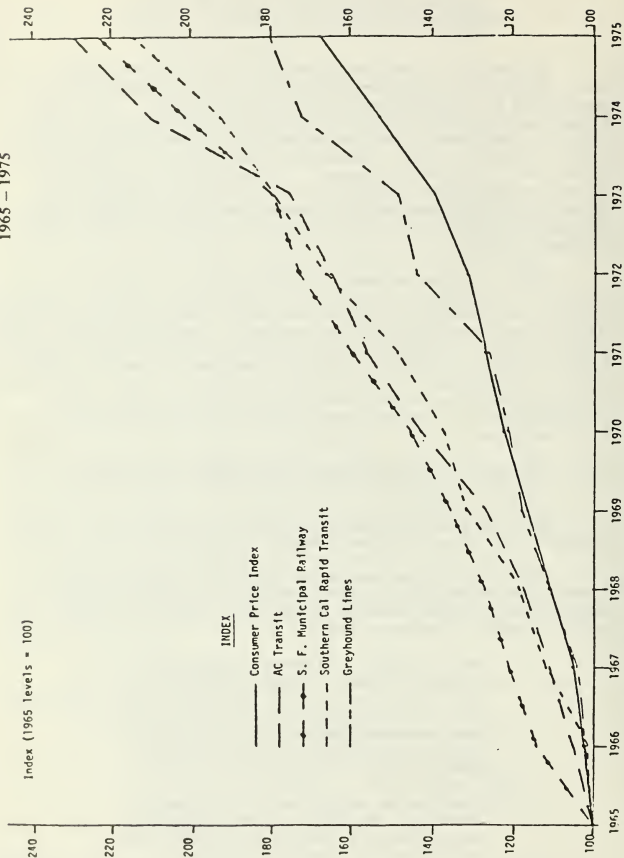
BART has had no apparent impact on wage and fringe benefit policies of other transit operators.

Exhibit IV displays wage rate and fringe benefit trends for BART, MUNI and AC Transit as well as some public and private transit operators outside the BART service area. Findings are:

- . Wage trends of transit operators in an area without rapid rail transit (in this case the Los Angeles area) and of other Bay Area private carriers are very similar to the overall AC Transit and MUNI rather than BART trends.
- . Changes in wage rates and fringe benefits for BART are not closely paralleled or consistent with rates at either AC Transit or MUNI.

EXHIBIT IV  
Public Policy Project

TRANSIT OPERATOR WAGE RATE ANALYSIS  
1965 - 1975



SOURCE: California Legislative Analyst, Financing Public Transportation in San Francisco Bay Area, November, 1975, Exhibit A.

- . Both in absolute values and in percent differences, AC Transit trends are more similar to MUNI's than to BART's.

In all, the results of this analysis suggest BART is probably not responsible for increases in AC Transit and MUNI wages and fringe benefits. However, the evidence provides little basis for determining any causal relationship between BART and AC Transit or MUNI wage rates and fringe benefits.

Interviews with transit system labor negotiators and personnel officers provided little additional evidence with which to clarify BART's role in recent wage and fringe benefit decisions of other Bay Area transit operators.

At AC Transit, BART is viewed as one point of reference and negotiation in bargaining sessions with the Amalgamated Transit Union. However, it is difficult to isolate BART's impact from that of other transit systems referenced in the process.

Overall, BART's impact on MUNI personnel policies is indirect and probably small. MUNI wages and fringe benefits are governed by a City Charter formula setting the maximum for MUNI wages and fringe benefits at the average of the two highest rates for transit workers in the country. Although BART has not been used in MUNI wage and fringe benefit comparisons, the union has used BART wages and working conditions to press the Board of Supervisors to approve the maximum allowable wage and benefit package (the Board is not obligated by the Charter to approve the maximum, although only once in the past 15 years have they approved less).

\* \* \* \* \*

In summary, efforts to coordinate existing transit operations with BART resulted in operator agreement on an interim regional transfer system, the first of its kind in the Bay Area. However, efforts to implement study proposals for integrated regional transit schedules were not very successful. Further, BART's impact on local transit wage and fringe benefit policies was found to be inconclusive.



### 3. LOCAL TRANSIT PLANNING POLICY<sup>6</sup>

#### BART Played Only A Limited Role In The Creation Of New Local Transit Systems In The BART Service Area

This section focuses on decisions to fund and/or provide new local or feeder transit service and the relationship of these decisions to BART. The analysis compares the development of transit service in the Bay Area with the State as a whole and examines the reasons for transit planned, initiated, and not adopted in the vicinity of BART.

Several recently formed transit routes or systems provide feeder service to BART stations. However, most of the systems also provide local service and came at a time when many other local services were being developed near BART. Furthermore, the feeder and local services are often funded in the same way as many of these services in other areas of California. Hence, it is likely that many communities now with local and feeder service may have developed similar services without BART.

Further, trends in the growth of new local transit operators across the State suggest that growth in the number of systems locating in proximity to BART is no greater than growth in systems located elsewhere in the Bay Area and the State (see Exhibit V). The number of local transit operators has grown substantially statewide. Recent increases coincide with the approval of the Transportation Development Act by the State Legislature in 1971 to provide sales tax funds for local transit statewide. The availability of this subsidy source rather than BART probably caused much of the increase in public transit operators in the Bay Area as well as throughout the State.

Two case study transit proposals in the BART service area were selected for more detailed analysis:

- . Fremont-Newark-Union City (Tri-City proposal), Alameda County--A new local transit system was approved in 1974 by the voters in Fremont and Newark but not Union City.
- . Central Contra Costa County (Local Mass Transportation Agency)--A proposed local transit system was defeated by public vote in 1974.

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<sup>6</sup> For more detail see Booz, Allen & Hamilton Inc., The Impact of BART on Local Transit Service and Financial Policy, Document No. WP-42-8-77 (Berkeley: Metropolitan Transportation Commission, December 1977).



EXHIBIT V  
PUBLIC POLICY PROJECT  
THE GROWTH OF CITY AND COUNTY  
PUBLIC TRANSIT OPERATORS IN CALIFORNIA  
1950-1974

<u>Region*</u>	<u>1950</u>	<u>1960</u>	<u>Percent Change (1950-1960)</u>	<u>1970</u>	<u>Percent Change (1960-1970)</u>	<u>1974</u>	<u>Percent Change (1970-1974)</u>
SCAG	6	9	50%	14	56%	27	93%
MTC	2	3	50	5	67	16	220
CPO	1	1	0	2	100	8	300
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Statewide	9	15	57%	28	87%	51	139%

Source: M. Mehdi Morshed, Inventory of Transportation Facilities and Equipment, State Transportation Plan, State Transportation Board, April 1976, Table 17.

- \* SCAG--Southern California Association of Governments (Los Angeles area)  
MTC --Metropolitan Transportation Commission (San Francisco Bay area)  
CPO--Comprehensive Planning Organization (San Diego area)

These two proposals--one success and one failure--were chosen to provide a comparative means for assessing BART's impacts on the development of local transit systems in general.

The Tri-City (Fremont-Newark-Union City) transit system proposal originated in 1970 with a cooperative study among AC Transit, BART and a Tri-City board. The first tax increase measure to fund transit system operations was defeated by the electorate in 1972. Subsequently, another joint powers board of Tri-City decision-makers developed a proposal for fixed route and dial-a-ride service which, after the withdrawal of Union City, was approved by the voters in 1974. The final system is operated by AC Transit as a special service area within the AC Transit District. The routes provide feeder service to BART stations, as well as provide extensive local service.

Although BART did play a role in the original initiation of the Tri-City proposal, it was not a cause for the eventual passage of the proposal. Further, the Tri-City proposal would most likely have been initiated and approved under the No-BART Alternative, although some routes and schedules would have been different.

- . Providing feeder service to BART was secondary in importance to providing local service in the Tri-City area.
- . The 1974 ballot measure was supported by important, diverse actors and interests and had no major opposition. BART was seldom used as a reason for or against the proposal.
- . Public information and ballot arguments circulated during the campaign emphasized dial-a-ride and local transit service and seldom mentioned BART feeder service as an argument for the proposal.
- . An analysis of Fremont-Newark voting returns by precinct shows proximity to proposed BART feeder lines did not appear to influence voters on the 1974 transit ballot issue.

The central Contra Costa County transit proposal was initiated in 1972 with a recommendation by the Contra Costa County Conference of Mayors to study transit needs and proposals for the County. Out of the conference grew recommendations for and the formation of the Local Mass Transportation Agency (LMTA), a joint powers organization for several cities and the County. In 1973, this agency joined with MTC, BART and AC Transit to study transit proposals with consultant assistance. The LMTA developed a proposal for dial-a-ride and fixed route service in a so-called County Service Area T-2. A local bond measure to provide funding for the proposed system failed in 1974. Some jurisdictions within the area now have their own systems to provide local services and BART feeder service.

The issue of providing feeder service to BART was a reason for the initial study of transit in Contra Costa County. However, defeat of the proposal was only partially, if at all, related to BART.

- . The original objectives for the T-2 area transit proposal were generally related to BART. However, as the LMTA was formed and began discussions with its technical and local advisory committee, the needs for local transit came to play a stronger role than feeder service to BART.
- . Issues of costs and benefits, not BART, concerned decision-makers in cities to be part of the T-2 service area. The issues of property tax costs and system benefits to each community were of particular concern, leading to long debates about variable tax rates for communities with different proposed combinations of dial-a-ride and fixed route service.
- . Just before the November 1974 election, the Contra Costa Times highlighted the high costs and subsidies of the nearby Richmond dial-a-ride service, an integral part of the T-2 proposal. The Times also gave attention to individual communities planning to go ahead with their own form of local transit without T-2 plans, purported to cost less for the same or better service.
- . The campaign for the ballot issue had the support of several important organizations, but never gained widespread attention. BART played only a mild supportive role. The opposition was not terribly active, but pressed hard on issues of concern--cost and benefits.

Although the outcomes of these two transit proposals differed, the relationship to BART was similar. In neither case was BART a primary cause in either the passage or defeat of proposals for local transit service. BART may, however, have served as a catalyst in forming initial transit proposals. In all, the provision of local transit service in areas that had no service at the time and the availability of State approved sales tax subsidies appeared to be more compelling reasons than BART for transit development.

#### 4. LOCAL TRAFFIC AND PARKING POLICY

##### Local Officials Took Few Policy Actions To Alleviate Overflow Parking And Traffic Congestion Near BART Stations

The development of a regional rapid transit system could impact local automobile transportation in two major areas--traffic congestion on local streets near BART stations and the availability of parking to facilitate automobile access to rapid transit.

This section describes the impact of BART on these elements of the local transportation system and subsequent local policy changes that resulted from these BART impacts.

##### (1) Traffic Congestion

Local jurisdictions have taken only minor policy actions in response to traffic congestion in many BART station areas.

BART's impacts on traffic congestion were:<sup>7</sup>

In a few suburban station areas, traffic to the station has caused some local congestion and a small increase in accident frequency. The most notable safety problem has been in Daly City where heavy commuter traffic and parking is concentrated along two-lane residential streets. A large percentage of residents surveyed near the Daly City and Concord stations expressed serious concerns about BART's effects on traffic congestion. Residents in other suburban areas were less concerned or indifferent to congestion caused by BART.

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<sup>7</sup> Gruen Associates and DeLeuw, Cather & Company, Environmental Impacts of BART, Document No. DOT-BIP-FR-7-4-77 (Berkeley: Metropolitan Transportation Commission, July, 1977).

- . BART has had some positive impacts on traffic congestion. For example, the construction of BART and State financed grade separations in Richmond actually improved the flow of traffic around existing railroad tracks.

Local policy actions to relieve this traffic congestion included:

- . The addition of traffic signals near BART stations.
- . Prohibition of some parking along heavily traveled streets.
- . Modifications to traffic intersections.

San Francisco was the single community to include BART in its original traffic planning effort. The city used BART as an argument to make long-desired changes in the traffic orientation of Market Street. For example, the city eliminated the requirement for parking in new downtown commercial developments. This change was made politically possible because of the added transit capacity provided by BART. If developers did provide parking, the number of spaces was severely limited. Further, the construction of new downtown parking garages was prohibited. These changes were intended to use the availability of BART and other existing transit to encourage transit rather than automobile use downtown.

## (2) Parking Availability

Few local jurisdictions have taken any action to alleviate overflow parking problems at or near BART stations.

The lack of an adequate supply of BART station parking has been a significant problem of the BART system. This shortage has caused heavy on-street parking in neighborhoods near 11 of the 34 BART stations. Parking lot overflow tends to be worst at terminal stations (except Richmond) and somewhat less severe at other outlying stations. In these areas, particularly Daly City and Concord, residents were more unhappy about parking overflow than with any other effect of BART. Residents complain that on-street parking by BART patrons limits parking availability for daytime guests and often blocks their access to some places in the neighborhood.

Few local jurisdictions affected have taken any action to alleviate these overflow parking problems. Most communities have insisted that BART expand station parking at its own expense. This action is not always feasible due to the lack of available suitable land. BART did arrange for 92% Federal funding to construct parking garages at three stations with the most serious parking problems--Daly City, Walnut Creek and Fremont. Only Daly City agreed to contribute the necessary 8% local match and the garage is nearing completion. However, BART has been expanding parking lots at many stations on the Concord line and at the Fremont station.

In other communities, some minor parking policy actions were taken. In one non-residential area, parking restrictions along nearby streets were changed to increase the availability of parking. In residential areas of San Francisco, residents are petitioning the city to restrict daytime parking on neighborhood streets.

Preferential parking has been adopted in one San Francisco neighborhood adjacent to the Daly City BART station, but the relationship of this policy change to BART is unknown.

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In all, BART was responsible for some serious, yet isolated impacts on parking and traffic. However, few local jurisdictions have taken policy actions necessary to alleviate the problems.

## 5. CONCLUSIONS AND IMPLICATIONS

The construction and development of BART added significant transit capacity in three counties in the Bay Area. This additional BART routing often parallels already established highway and transit routes. Transportation policy actions taken by BART, local governments, transit districts and highway agencies provide a number of lessons about the development of a comprehensive transportation system.

Local governments, the State Division of Highways and transit operators adopted transportation policies in response to BART which:

- . Had little or no effect on the overall size of the Bay Area highway system.

- . Allowed the maintenance of much of the pre-BART level of existing local transit service by opposing the elimination or reduction of routes and frequencies paralleling BART, while adding some new services partially to feed BART.

Overall, these policy actions appear to have significantly increased the capacity of the regional transportation system. However, the lack of more effective parking and transit policies has limited the potential for BART system access.

Specific conclusions in each of the four transportation policy areas studied are:

- . BART has had little impact on the number and type of highway facilities constructed in the Bay Area. BART's main impact on highway planning policy was in the form of specific agreements for joint highway/rapid transit development. The State responded to BART with more general policies, but they were vague and never adopted by the Highway Commission.
- . Despite early attempts to facilitate coordination, BART had relatively little impact on the operations of the two major existing transit operators in the BART District, AC Transit and MUNI. The three operators were able to reach agreement on acceptable transfer systems, but operators admit the systems are not optimal from the user standpoint. Operators never did agree on the appropriate service levels and schedules to promote system integration.
- . An analysis of two specific new local transit service proposals (Contra Costa County and Tri-City in Alameda County) and a general review of recent local transit service development throughout the State of California, indicated that BART planning and development were not sufficient reasons for the creation of either feeder or local transit service. Although local areas proposed new transit systems which were publicly supported by BART, actual system development near BART appears more related to newly available Federal and State subsidies than to BART.
- . BART had a noticeable adverse impact on local automobile transportation near many BART stations. Specific outcomes were an increase in local traffic congestion and the lack of available parking at some BART stations. Most local jurisdictions took few policy actions to try to alleviate these problems.



Although BART-related policy actions may not have set the foundation for an integrated transportation system, this outcome is not surprising given the institutional fragmentation of transportation policy-makers in the Bay Area. BART was formed as a regional transit agency in the midst of a variety of existing public and private transit operators. No regional authority (until MTC was formed in 1970) was available to mediate joint coordination efforts or impose regional cost effectiveness criteria on BART development.

Regions with a single regional transit operator may be able to make individual service level/cost trade-offs that operators in the Bay Area were unable to do. In the absence of a single transit authority, a regional planning and funding agency, with sufficient decision-making authority and funding leverage, could certainly enhance prospects for system coordination.

Local policy implications which may be useful to other areas considering rapid rail transit development are:

- . The BART experience suggests it is unlikely that rapid transit development alone will reduce the level of highway investment in areas with independent highway and rapid rail planning processes. Local officials would have to design a planning process which includes the comparison of the cost effectiveness of highway/transit development alternatives across modes and gives a regional or state agency sufficient authority to control financing and monitor implementation of highway/transit investments.
- . The BART experience shows comprehensive route and schedule planning is not sufficient to alter the service policies of existing transit systems. Planning studies must go beyond study of the most cost effective combination of rail and bus routing to examining incentives for implementation if any results are to be expected. Where separate agencies provide bus and rail service, it may also be necessary to study ways to protect or compensate transit agencies during coordination experiments.
- . Initial rapid transit system planning should include an analysis of coordination issues which may affect system design. Examples of such issues include coordination of station location and design with potential feeder transit and the purchase of fare collection equipment in terms of compatibility with that of other transit operators.



. The significant adverse effect of parking congestion caused by BART suggests that other jurisdictions should ensure that parking policy, particularly in suburban areas, receives high priority attention from transit planners. BART's substantial cutback in parking (only half of the originally planned 36,000 spaces were initially constructed) and its adverse result, suggests parking lot construction should be a more important concern in system construction. Given the uncertainty of parking demand, these planners should investigate contingency plans and designs for lot expansion to meet a realistic range of parking demands in any given station areas. Attention to protecting surrounding neighborhoods from overflow parking may also be necessary. Preferential neighborhood parking plans may be helpful.

In general, the BART experience suggests that policy actions by local governments, transit districts and highway agencies can all contribute to developing a comprehensive regional transportation system. However, institutional arrangements and incentives are important to ensure appropriate policy actions are taken in a timely manner.

## VII. PROGRAMWIDE CASE STUDY AREAS

The BART Impact Program selected seven Bay Area communities to serve as programwide case studies for use in all BIP analyses. These seven communities were chosen to represent a range of urban/suburban settings with which jurisdictions outside the Bay Area can identify. Urban development and demographic characteristics were the principal criteria used in selecting this broad spectrum of case study communities.

This chapter interprets the findings presented in the four preceding chapters for each of the three general categories of case study areas--urban core (San Francisco and Oakland), urban residential (Mission, Rockridge and Richmond) and suburban (Fremont and Walnut Creek). Individual case study findings are compared and contrasted within the appropriate category.

For each of these three categories, the BART findings are presented in four sections:

- . Environment--describing the economic, demographic and public policy environment in each of the case study areas.
- . Community Expectations of BART--outlining the community goals and objectives for rapid transit both before and after BART development.
- . BART Outcomes And Public Policy Impacts--analyzing the causal relationships between general BART system outcomes and BART-related public policy actions taken by each jurisdiction.
- . Implications--suggesting the appropriate lessons of the BART experience for each type of community.

A final section provides a summary of the impacts of BART on the different categories of local communities.

### 1. URBAN CORE AREAS

BART was explicitly designed to bring travelers from outer areas of the metropolitan region to the two major downtowns of San Francisco and Oakland. There are a number of important similarities in as well as differences between the two downtowns.

(1) Urban Core Area Environment

Over the last ten years, both cities have experienced an increase in service industries and a decline in manufacturing. The resident population, but not the number of households, in both core cities has continued to decline, with a change in mix toward increasing percentages of old and single young persons and a decline in the percentage of middle class families. Both cities have a diverse and sizeable population of ethnic minorities.

However, Oakland and San Francisco can hardly be called similar in terms of growth and image. San Francisco has historically been a west coast center for corporate headquarters as well as finance and insurance companies. Demand for commercial and office space has increased correspondingly in recent years. San Francisco has one of the lowest vacancy rates in the United States for business/commercial space. Most businesses appear to associate more prestige with a San Francisco location than an Oakland location.

The political decision-making processes of these cities are structurally similar but operationally different. Both cities elect their mayor and legislative representatives at large (although recently changed to district elections in San Francisco) and employ a city manager or administrative officer. However, Oakland decision-making tends to be centralized under the City Manager compared with San Francisco's decentralized and fragmented organizational structure. The Oakland City Manager dominates decision-making. He controls most staff and information sources and shares or reinforces council views on the need for cost reduction and lower property taxes. Alternatively, no San Francisco official appears to control decision-making. Independently elected city officials, a diversity of boards and commissions and a division of power between the Mayor and Chief Administrative Officer ensures no single official dominates decision-making.

BART has several stations close to the commercial downtowns of both Oakland and San Francisco. Stations are conveniently located for access to and from business in both cities. For example, in San Francisco, walking is the method of accessing BART for 77% of all transbay trips from the four downtown stations. In Oakland, walking is the access means for 59% of the transbay trips from the Lake Merritt, 19th and 12th Street stations.

(2) Community Expectations of BART

Media representatives, decision-makers, business groups and other interests in Oakland and San Francisco held a variety of expectations for BART before the system was completed.

Local government officials in both cities generally had positive expectations for BART:

- . In both cities, decision-makers and planners contemplated ways to develop and revise public projects in anticipation of BART. Examples include Yerba Buena Redevelopment Project and Market Street beautification in San Francisco and the City Center Redevelopment Project in Oakland. These developments--including parks, plazas, landscaping and MUNI Metro construction --along with BART, were expected to generate private development and stimulate economic activity.
- . Local officials in both cities expected generally positive impacts of BART on city budgets. Expanded private development and business activity was expected to bring new tax revenues. On the other hand, officials expressed few concerns about the cost of servicing public improvements revised by BART and the effect of the BART debt burden on the security offerings of some agencies.
- . Local officials did express some concerns about coordination for potential BART construction disruption.

Business leaders had varying expectations for development in San Francisco and Oakland. The San Francisco business community was the original proponent of BART, vitally involved in the early organization to create BARTC (Bay Area Rapid Transit Committee), the initial planning agency for BART. San Francisco business saw BART as an opportunity to revitalize parts of the downtown area and reduce congestion on major corridors leading into the city. According to a former Oakland mayor, only one Oakland business enthusiastically supported BART in the pre-planning stages. Some Oakland business leaders were concerned about losing business to San Francisco because of BART.

Merchants in both cities generally feared BART construction would harm their business in the short run by limiting automobile and pedestrian access along major thoroughfares in each city.

Community groups generally had mixed expectations of BART. Some conservative and anti-highway forces welcomed transit generally as an alternative to the auto. Others expressed concern for how BART might ruin San Francisco by encouraging too much high-rise development. Minority groups appeared to hold few, if any, expectations for BART. Only after BART construction had begun did some minority groups lobby for an affirmative action program for BART. Nor did the elderly or handicapped express any very visible expectations about BART before its construction.

### (3) BART Outcomes And Resulting Public Policy Impacts

Differences in public policy actions were in part responsible for quite different impacts of BART in the two core areas studied. However, factors such as market conditions and development opportunities, appeared to be even more important in explaining these differences.

In Oakland, the most significant expectations for BART--that it would affect developmental policy and business activity--have been only partially fulfilled. BART was incorporated into plans for the City Hall Plaza, for access to a new junior college campus near Lake Merritt, and for changes in some downtown streets to allow for pedestrian and bus access to BART. BART was instrumental in increasing the size of the City Center Redevelopment Project, and provided \$2 million in local credits which would not have been available otherwise. Yet, the City Center Project has been slow to attract commitments from retailers, who reportedly are more interested in completion of a nearby freeway than proximity to BART. Despite some policy actions to encourage development, the demand for office/commercial/retail development was weak and little activity occurred.

San Francisco's expectations for development resulting from BART have generally been realized, but the relationship of this outcome to BART is unclear. As in Oakland, San Francisco took advantage of BART expenditures which qualified as non-cash credits in the city's redevelopment areas. However, San Francisco officials took more aggressive actions in other areas of local land use policy, such as zoning changes and special incentives. BART was also a primary reason for the city's initiation of a \$35 million Market Street

Beautification Project. Oakland sponsored a similar project, but only at a \$1 million level. However, the most telling difference was the high level of demand for office/commercial/retail space in San Francisco compared with only weak demand in Oakland.

BART has had a small effect on bus transit, traffic and parking policies in the downtowns of both cities. Bus service within each core area would probably not have been different under the No-BART Alternative. However, bus service from the East Bay to downtown San Francisco would have been higher in the absence of BART, although service from outlying areas of San Francisco would have been lower (assuming MUNI Metro will eventually improve service to the downtown).

BART did create considerable disruption to business auto traffic and pedestrians during construction, but the resulting underground system in the city cores is generally considered environmentally and esthetically pleasing.<sup>1</sup> At worst, BART construction blocked easy access to business and regular parking, leading to some reduction in business. However, BART in downtown San Francisco and Oakland is now viewed as appealing to patrons and business.

BART was also the primary reason for a number of locally funded capital improvement projects in the downtown areas. Examples include the Market Street beautification, BART station plazas, street improvements, etc. In San Francisco, the downtown area appeared to benefit the most from locally funded improvement projects (like Market Street beautification, funded largely by general obligation debt), while the entire city incurred the cost. BART also enabled the cities to attract more Federal and State funds to the downtown area for redevelopment and public improvement projects.

#### (4) Implications of BART for Urban Core Areas

BART has had a number of significant impacts on two of the Bay Area's major urban core areas--San Francisco and Oakland. Comparing and contrasting the outcomes in these two cities suggests a number of lessons for other urban core areas.

The BART impacts and policy outcomes in San Francisco and Oakland suggest BART-like systems might have their most significant impacts on land use and development.

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<sup>1</sup> Gruen Associates and DeLeuw, Cather & Company, Environmental Impacts Of BART - Document No. DOT-BIP-FR-7-4-77, (Berkeley: Metropolitan Transportation Commission, July 1977).



Contrasting the experiences in San Francisco and Oakland suggests that aggressive local land use policy actions can alter the timing, direction and location of development in response to rapid transit. However, the appropriate economic incentives and market conditions must be there to allow such development to take place. Even where demand in downtown areas is low, local governments can focus their attention on the types of changes that might make their city a more desirable location and, thereby, improve demand. For example, it will often help first to improve the downtown's physical environment and alleviate expected land assemblage problems. Joint transit/local government development may be the most appropriate way to achieve these changes. Such a policy would include public improvements (such as beautification projects), local land acquisition, marketing and public relations activities and zoning incentives for development near transit.

Bus transit within the urban core may not be affected by a new rapid rail system. The level of impact probably depends on whether the bus and rail service fall under one or more agencies and the funding sources of each system.

The disruption effects of building a rapid rail system downtown should not be discounted. Downtown construction will generally be subway, the most disruptive form. One way for city decision-makers to cope with this problem is to design agreement provisions to compensate for the expected adverse impacts of rapid transit construction. Local governments in the Bay Area negotiated agreements with BART for certain improvements based, in part, on hunches about the severity of the disruption. The BART experience indicates devising such agreements may require the city to appoint a full-time liaison staff to negotiate with the rapid rail authorities.

The financing of BART has generally not altered the fiscal condition of Oakland or San Francisco city governments. In many cases, urban core areas can benefit through a concentration downtown of transit-related public improvements which are funded by general city debt.

## 2. URBAN RESIDENTIAL COMMUNITIES

Much of the BART service area is in the highly urbanized residential areas of the East Bay as well as in the densely settled City of San Francisco itself. Three of these urban residential neighborhoods--San Francisco's Mission district, Oakland's Rockridge district and the City of Richmond--were chosen to represent the diversity of urban residential communities in the BART service area.

### (1) Urban Residential Community Environment

The Mission district is an older, medium density neighborhood with a shopping area extending along Mission Street, with some thriving as well as declining sections. The community was well served by local transit as well as private jitneys prior to BART. The district is now also served by two BART stations (16th and Mission and 24th and Mission Streets) located along a subway below the principal shopping street and transit spine of the community. The population can be characterized as minority and low income, with a 45% Latino population and 20% of all families below the poverty line in 1970.

In contrast, the Rockridge district is an older, predominantly single family neighborhood with a stable shopping area which was well served by AC Transit buses prior to BART. This district is served by one BART station located in an above-grade section in the median of the freeway where it crosses the main shopping street (College Avenue). The community's population is 80% white, with a slightly higher median income than the rest of Oakland.

Richmond is a diversified urban area with a strong industrial base, but a declining downtown area. The city is located north of downtown Oakland and was poorly served by transit prior to BART. This city is served by one BART station and parking lot located at-grade along an existing railroad right-of-way, midway between the city's declining downtown area and its civic center. The city's population has declined by 35% since its peak during World War II. The population is now 46% minority with a large proportion of lower income households.

### (2) Community Expectations of BART

Public officials expected BART to strengthen their urban residential communities through a more comprehensive transportation system, higher density development and improved public facilities. These high expectations were generally the result of an aggressive BART marketing



effort as well as reports of positive rapid transit impacts in other communities, notably Toronto. Each jurisdiction conducted land use and economic development studies projecting significant land use and development activity, although these projections were not universally endorsed.

Residents of urban residential areas expected BART, in conjunction with existing local transit systems, to provide significant improvements in transit accessibility. This was particularly true in Richmond which had poor transit service prior to BART. While BART did project significant gains in accessibility, some community groups, particularly organizations in the Mission district, reportedly felt that BART would serve wealthier suburban communities better than their own residential neighborhoods. Community groups in the Mission and Rockridge districts also feared projections of increased land use and development in BART station areas as a threat to the community's scale and character.

### (3) BART Outcomes And Resulting Public Policy Impacts

BART had a fairly limited impact on public policy in residential communities. What few impacts occurred relate to the overall transportation system or land use. These impacts were few and much less than expected for three primary reasons:

- . BART service has not achieved its originally projected level due to operating problems.
- . Early projections of BART impacts in the urban residential communities were most likely overstated.
- . Local public officials did not implement the kind of supportive public policies that appeared to be necessary to achieve the BART results they expected.

Overall, BART had little impact on transportation policy in these urban residential communities. The urban residential communities of Mission and, to a much lesser extent Rockridge and Richmond, do not perceive any noticeable improvement in accessibility with BART.

BART is still not operating at the headways, speeds and reliability originally expected. Therefore, travel times are not noticeably different than before BART. The delay in implementing the direct Daly City-Richmond line service has severely limited BART's ability to effectively serve Richmond.

On the other hand, the Mission and Rockridge communities are experiencing increased on-street parking and local traffic congestion due, in part, to BART. Richmond has not had the same problem, largely because actual BART patronage is significantly below projected levels. The City of San Francisco chose not to have BART parking lots at any of the city stations. At the same time, BART did construct parking lots at the Rockridge and Richmond stations, but the lots are not normally filled to capacity.

In the Mission and Rockridge Districts, few local policy actions have yet been taken, but community groups are pressing for increased action. Policies under consideration include time-limited parking, metered parking and preferential parking permits for neighborhood residents.

Limited, generally conservative changes in land use policy for residential areas have led to few changes in land use near BART stations in the Mission and Rockridge Districts. Expectations of increased housing and office/retail demand have not yet been realized in these areas. Projections of increased development in residential areas due to BART have led community groups to press local officials for more conservative local land use policy such as reductions in existing residential zoning and reductions in height limits and commercial zoning. In most communities, these demands for changes in land use policy were eventually implemented.

In contrast, BART has caused some changes in local land use policy in Richmond to encourage development. Studies of Richmond did not project the substantial development as a result of BART that was projected for the Mission and Rockridge District. Neither were Richmond community groups active in supporting neighborhood conservation. As a result, an expanded Redevelopment Project was approved and public improvements were planned.

Finally, BART, as a tangible rallying point, led to the strengthening of Mission community organizations and was one of many causes for the reorganization of a community group in Rockridge. In the Mission and Rockridge Districts, strong organizations developed where the most dramatic BART land use impacts were projected. City responses considered insensitive by the communities resulted in the formation (in Rockridge) or cohesion (in Mission) of strong organizations effectively demanding more local control over land use and BART-related decisions.

#### (4) Implications For Urban Residential Communities

Overall, BART has had little impact on the three urban residential neighborhoods studied. BART was designed primarily as a commuter rail system linking suburbs with the downtowns. Consequently, BART was not really intended to cause major changes in the urban residential communities through which it passed. Despite this rationale, BART proponents did project a significant level of impacts in urban residential communities. Conservative public policy actions, particularly with respect to land use, were one of many causes for the limited impacts cited.

Further, urban residential communities are largely developed, transit routes are usually well established, and it is generally much more difficult to implement a strategy for transit-related changes.

Urban residential communities should expect at least minor increases in local traffic and parking with the opening of a rapid transit station. Communities should become involved early in rapid transit design and planning to accommodate these inevitable problems of overflow parking and traffic congestion near rapid transit stations. The lack of available parking cannot be expected to reduce overall demand without additional supportive local policy actions. Local communities must make a trade-off between a large, unsightly rapid transit parking lot and the prospect of overflow parking and traffic on nearby residential streets unless transit feeder service can be provided and used.

Early involvement in land use planning is the primary way community groups can effect the expected changes in their neighborhood due to the arrival of rapid transit. Where communities are preservation-oriented, such as the Mission and Rockridge Districts, community groups should argue for restrictive zoning and other controls in areas where high density development would be expected. In areas like Richmond, where increased development is desired but where market demand is low, decisive and timely redevelopment and public improvement policies can help foster development, but results may still not meet local expectations.

### 3. SUBURBAN COMMUNITIES

Just as BART was intended to focus on the San Francisco-Oakland core, it was also meant to serve the distant suburbs that began their greatest growth in the 1950's and 1960's. The two areas studied have participated dramatically in that growth, but from different perspectives.

#### (1) Suburban Environment

Walnut Creek is an upper-middle class, white auto-oriented, single family suburb. Median family incomes are high, and a significant proportion of the work force commutes to downtown San Francisco and Oakland. Most commercial and residential development took place during the 1960's, slowing markedly in recent years. The city had generally implemented public policies to control the type and location of development.

Fremont provides a useful contrast in that incomes are somewhat lower than Walnut Creek's, there are many more blue collar workers, and only a small fraction of all workers commute to the central downtowns. Further, Fremont has largely encouraged a dramatic level of growth in the past decade. While Walnut Creek represents more of a "bedroom community" for the urban core, Fremont appears to be more suburban in orientation.

#### (2) Community Expectations of BART

Suburban communities expected BART to have a significant impact on local land use and development. From early in the BART planning stages, the positive impact of rapid transit on suburban development was presented as a major benefit of building BART. Major land use impacts expected in both Walnut Creek and Fremont were:

- . Higher density BART station area residential development, thereby improving economy in delivery of public services.
- . Increased commercial development in central business districts.
- . Increased residential development throughout the area.

BART was also expected to have a significant impact on transportation for suburban residential communities. BART proponents used improved accessibility to downtown Oakland and San Francisco as a primary argument in selling the system. Local officials did not anticipate any negative impacts of BART on local transportation. For example, planned parking capacity was expected to be adequate. No impacts were expected on local policies for municipal organization, operations and finances.

### (3) BART Outcomes And Resulting Public Policy Impacts

BART had only modest impacts in Fremont and Walnut Creek. The only noticeable impacts were on local transportation and land use policies. This low level of impact is, in part, the result of only a single rapid transit station and rapid transit routing at-grade (rather than subway) along existing rights-of-way.

BART has had some positive impacts on local transportation in both suburban communities. Although BART ridership from both Fremont and Walnut Creek is about half what was projected, the parking lots for both stations are too small to hold all of the automobiles belonging to BART riders. This parking lot overflow is due to the unexpectedly high proportion of "park-and-ride" passengers.

Because of station parking space shortages, on-street parking spaces in both cities are filled with autos belonging to BART riders. This impact has led to negative attitudes of residents and business people toward BART. In Fremont, the manager of a shopping center near the BART station had to hire some additional security staff to control the parking by BART patrons in the shopping center parking lot. Parking overflow has also prevented the City from constructing a bicycle path.

Even generally supportive land use policy actions have had little effect on land use changes in suburban communities. In both Fremont and Walnut Creek, BART resulted in increased planning activity around the station areas and several amendments to the general plans.

- . In Fremont, General Plan amendments approved in 1969 (three years prior to BART's opening) increased the residential housing density near the BART station. Subsequently, two commercial developments, Capwells Department Store and the Fremont Fashion Center, located in the extension of the CBD, adjacent to the BART station.

- . In Walnut Creek, the presence of the BART station led to extensive planning activity to determine what kind of development should be encouraged around the BART station. The construction of the one high-rise office complex--the Dillingham Building--led to public concern over high-rise construction. As a result, the city implemented land use policy changes to discourage intensive development in the station area.

Although local zoning maps have been changed as a result of BART, Fremont and Walnut Creek have experienced little development or redevelopment directly attributable to BART.

#### (4) Implications For Suburban Communities

Overall, BART appears to have had relatively little impact on either Fremont or Walnut Creek. The lack of impact, however, can provide some preview of what similar suburban areas might expect from rapid transit.

The BART impact on station area parking requirements was similar in both Fremont and Walnut Creek. Overflow parking by BART patrons has created both hazard and inconvenience for local residents as well as for the BART patrons themselves. BART is currently expanding the parking facility in Fremont and Walnut Creek after more than four years of operation.

This outcome suggests if limitations on station area parking are either desired or required, then efforts should be made in the planning stages to reduce the system's dependence on "park-and-ride" station access. Alternative strategies include providing adequate local feeder transit service, increasing the number of rapid transit stations or implementing car pool incentive policies. Otherwise, transit planners should be willing to provide necessary parking facilities and try to make any needed cost reductions elsewhere.

The minimal impact of BART on land use in Fremont and Walnut Creek suggests that other suburban localities should not expect the dramatic impacts on land use that were originally projected for BART. Even zoning changes and intensive planning activity in anticipation of the projected land use impacts have not, as yet, resulted in a noticeable increase in development due to BART. Despite the lack of impact thus far, suburban communities can make certain policy changes which may contribute to achieving their objectives.



- . First, land use policy initiatives will likely be more successful in stimulating local development if they focus on commercial and industrial uses which attract transit users rather than residential uses which feed transit. In both Fremont and Walnut Creek, the only BART station area impacts have been either commercial or institutional development.
- . Second, suburban transit stations should not expect to attract significantly increased shopping activity because of transit. Such increased activity will likely not occur because of the continued convenience of the automobile for shopping trips.

#### 4. CONCLUSIONS

This section briefly summarizes the overall conclusions on BART's impact on local communities in the Bay Area.

Overall, BART had its most dramatic impact on the two major urban core areas within its service area. This comparatively high level of impact was expected--early system proponents viewed BART as an important device for revitalizing the downtown areas, particularly San Francisco. In addition:

- . The BART system route and station alignment were designed to bring suburban commuters to the major downtown centers.
- . BART has many stations in the downtown areas, increasing access, but also construction disruption. The subway construction used in the downtowns was the most disruptive form compared with at-grade or aerial construction used in most residential areas. However, now that BART is operating, disruption in the downtown areas with subways is almost non-existent compared with some limited adverse impacts along at-grade or aerial lines in outlying areas.
- . Urban core areas, especially San Francisco, viewed BART as an opportunity and aggressively used local policy (particularly land use) to achieve their local objectives.



Despite the positive impacts of BART on downtown areas, rapid transit is not sufficient to achieve local objectives without other supportive policy actions.

In contrast, BART has had little impact on urban residential communities in its service area. BART was designed as a commuter rail system linking suburbs and downtowns. The urban residential areas in San Francisco and Oakland already had good transportation service to the downtowns. BART was, therefore, not originally expected to cause major changes in these areas, although some changes, particularly in land use, were projected by many officials. Fearing any projected impacts, community groups in two of the urban residential communities studied convinced local officials to take conservative public policy actions to prevent impacts. Therefore, the potential of rapid transit in urban residential communities with supportive public policies is not known.

In general, the suburban areas also appear to have experienced less impact than the urban core areas. Unlike these more densely populated areas, there were simply fewer opportunities for rapid transit impacts in these rapidly growing suburban areas. This does not suggest that rapid transit impacts will affect all suburban areas the same way. Suburban areas that are stagnating or deteriorating, those which have a different relationship to the urban core areas, or those where more than one rapid transit station is planned, may well experience substantially different impacts than either Walnut Creek or Fremont.

## VIII. SUMMARY, CONCLUSIONS AND IMPLICATIONS

The Public Policy Project was designed to measure both the direct and indirect impacts of BART on public policy actions and the public policy-making processes of local, regional and state governments. Further, the project assessed the impact of these public policy changes on BART.

This report presents specific findings, conclusions and implications of public policy impacts in four areas (organization, finance, land use and transportation) and for three categories of local communities (urban core, urban residential and suburban).

Overall, public policy responses to BART have been only marginally different from what would have been expected in the No-BART Alternative scenario (in the absence of BART and no other major capital investment in the Bay Area's transportation systems).

However, BART has had a few significant impacts on public policy decisions, primarily in the areas of land use planning and policy and transit financial policy. BART has had little or no impact in other policy areas studied such as institutions and local financial and transportation policy decisions and processes.

Further, public policy impacts of BART are generally more pronounced in urban core areas compared with urban residential or suburban areas and are normally the result of local rather than regional or state policy decisions.

The first three sections of this chapter summarize this material in terms of overall project conclusions. Finally, the chapter considers the transferability of study findings, by level of government, to other metropolitan areas now considering an investment in rapid rail transit. Policy implications for other regions were developed in light of the unusual circumstances and constraints facing the Bay Area in its rapid rail transit development effort.

### 1. OVERALL LEVEL OF IMPACT

#### Public Policy Responses To BART Have Been Only Marginally Different From What Would Have Been Expected In The No-BART Alternative Scenario

Bay Area public officials took few policy actions directly or indirectly because of BART. Most of the actions that were taken in response to BART were intended to protect against, rather than take advantage of BART. Further, local public officials made

policy decisions individually, rather than as part of a coordinated strategy, to provide a balanced and cost effective total transportation system for the Bay Area.

BART also had little or no lasting impact on the policy decision-making processes of public organizations in the Bay Area. Policy decisions were generally made using existing governmental decision-making processes. BART policy decisions were generally consistent with the characteristics of policy-making processes briefly described in Chapter II of this report.

- . BART issues were usually raised as problems, not opportunities. Local governments generally responded to BART needs rather than initiating local policy. Coordination between BART and existing transit operators exemplifies this tendency.
- . Policy decisions in response to BART were often made incrementally. Major changes in existing policies were generally not feasible or were long in coming. For example, organizational responses to BART were only temporary and represented variations in existing structures rather than new structures.
- . Implementation of policy recommendations as a result of BART was often difficult. For example, detailed planning studies recommended substantial changes in existing local transit service near BART, although few of the recommendations were ever implemented.

Local public policy actions have not been a primary influence on BART design or operations. The absence of significant public policy impacts on BART reflects more the lack of comprehensive policy actions than the lack of a causal relationship. As mentioned earlier, public officials generally took few policy actions in response to BART. What actions were taken, however, did have some, although generally a minor, impact on BART. For example:

- . Although sometimes viewed as "too little, too late," local land use policy did affect BART route configuration and station location in some areas as well as development of public improvement projects in areas such as San Francisco.
- . Policy actions of other existing transit operators have not been as supportive as hoped in terms of providing effective access to the BART system.
- . The formation of the Metropolitan Transportation Commission in 1970 resulted in the adoption of regional policies on transit financing, service levels and costs which have begun to affect BART.

## 2. MOST SIGNIFICANT PUBLIC POLICY IMPACTS

Although BART's overall impact on public policy has been small, BART has had a few significant impacts on policy decisions, primarily in the areas of land use planning and policy and transit financial policy.

(1) BART Has Had A Number Of Significant Impacts On Land Use Policy, Particularly On Planning Studies And Subsequent Public Improvement Or Redevelopment Policy

BART had its most significant impact on local land use policy. A wide variety of recent planning studies, zoning changes, incentives and public improvement projects can be traced, in part, to BART. For example:

- . High expectations of BART's impact on land use and development resulted in the initiation of special planning studies for BART station areas and corridors, resulting in General Plan and zoning changes in each of the case study cities.
- . Zoning changes (either upzoning or downzoning) were made near BART in each of the case study cities. The type of change depended on the development expectations and community goals of the neighborhood. For example, Mission and Rockridge community groups supported lower density development than was projected and succeeded in reducing zoning in the station areas. In contrast, San Francisco increased zoning allowances to encourage development near BART.
- . BART was a primary cause for the expansion of redevelopment areas in San Francisco and Oakland and the implementation of the Market Street Beautification Project and other less significant public improvement projects.

Local planning officials in some communities were the one group that generally viewed BART as an opportunity to achieve other local objectives and initiated policy actions accordingly. Despite this significant impact

compared with other areas of local government policy, land use policies generally still fell short of what would have been needed to meet local development objectives.

(2) Local Land Use Policy Changes As A Result Of BART Have Been One Of Many Causes For Changes In Land Use Near BART

Land use policy changes as a result of BART have played a noticeable role in affecting the patterns of land use and development in the BART-served communities. However, the degree of change generally depended more on the extent of market demand and the degree to which policy controls were matched with incentives than on BART. For example:

- . The effective combination of local policy actions and market demand in San Francisco led to changes in timing and location of development compared with what would have been expected in the absence of BART. The Market Street Beautification Project, made politically and financially feasible by BART, allowed the city to encourage development along Market Street near BART and impose restrictions on development in other parts of the CBD.
- . Where market demand was not present and zoning incentives near BART were not combined with restrictions elsewhere (as in Oakland and Richmond), changes in land use due to BART have been less noticeable. The only evident changes are in local redevelopment projects, where BART construction funds qualifying as local credits for Federal redevelopment funding allowed Oakland to expand its redevelopment projects and allowed Richmond to fund grade separated railroad crossings.
- . In areas where moderate market demand developed, but where substantial community opposition existed, early efforts to encourage development through zoning were reversed. The more restrictive controls adopted have so far succeeded in preserving the existing neighborhood scale.

- (3) The Metropolitan Transportation Commission Has More Authority Over Allocation Of Transit Funding And Monitoring Transit Operator Performance Than Would Have Been Likely Without BART

BART requires a permanent source of public funds to maintain its operations, thereby increasing the total financial resources for transit within the region over what would be expected under the No-BART Alternative. This need for increasing resources has led to more involvement by the State Legislature--first in authorizing additional funds and then in giving MTC increased authority for monitoring the use of those funds. This authority includes decisions about allocating most regional, State and Federal discretionary transit funds among operators within the region. Further, MTC is in the process of developing and implementing operating performance standards for all transit operators in the region.

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In contrast, BART has had little or no impact on other policy areas studied such as institutional arrangements and local government financial transportation policies.

- (1) BART Has Caused Few Lasting Changes In Institutional Arrangements At The Local, Regional Or State Level

In general, governmental organizations in the Bay Area responded to BART plans and activities within existing organizational structures and decision-making channels. The cities of San Francisco and Oakland did establish short-term ad hoc committees and appointed a BART liaison within the city government to obtain necessary permits and traffic plans to facilitate BART construction. However, smaller case study cities found no need for these positions or committees.

- (2) BART Allowed Some Cities To Benefit From New Sources Of Revenue, But Generally Caused Little Change In Local Government Budgetary Or Capital Improvement Decisions

Overall, the financing of BART construction and operations had a somewhat favorable impact on the fiscal position and financial policies of local governments in the BART service area.



- . While BART was a highly visible part of the rapidly rising composite tax rates in the 1960's, the BART debt burden and tax rate did not influence local tax rate or bonding decisions.
- . BART had a favorable impact on local government finances by providing new sources of financing for public improvement projects.
- . BART had a minor adverse impact on local government finances by requiring cities to incur some additional operating expenditures for maintenance caused, in part, by BART.

(3) BART Has Caused No Dramatic Changes In State Highway Facilities, Plans Or Policies

BART has had little impact on the number and type of highway facilities constructed in the Bay Area. BART's main impact on highway planning policy was in the form of specific agreements for joint highway/rapid transit development. The State responded to BART with more general policies, but they were vague and never adopted by the Highway Commission.

(4) BART Has Played Only A Limited Role In The Creation Of New Local Transit Systems Or In The Policies Of Existing Transit Systems

An analysis of two specific new local transit service proposals (Contra Costa County and Tri-City in Alameda County) and a general review of recent local transit service development throughout the State of California, indicated that BART planning and development were not sufficient reasons for the creation of either feeder or local transit service. Although local areas proposed new transit systems which were publicly supported by BART, actual system development near BART appears more related to newly available Federal and State subsidies than to BART.

Despite early attempts to facilitate coordination, BART had relatively little impact on the operations of the two major existing transit operators in the BART District, AC Transit and MUNI. The three operators were able to reach agreement on acceptable transfer systems, but operators admit the systems are not optimal from the user standpoint. Operators never did agree on the appropriate service levels and schedules to promote system integration.



- (5) Local Officials Have Taken Few Policy Actions To Alleviate Overflow Parking And Traffic Congestion Near BART Stations

BART had a noticeable adverse impact on local automobile transportation near many BART stations. Specific outcomes were an increase in local traffic congestion and the lack of available parking at some BART stations. Most local jurisdictions took few policy actions to try to alleviate these problems.

3. AREAS MOST AFFECTED BY PUBLIC POLICY IMPACTS

- (1) BART Has Had A Comparatively Greater Impact On Public Policy Decisions In Urban Core Areas Than In Urban Residential Or Suburban Areas

The urban core areas of Oakland and principally San Francisco had more opportunities for BART impacts and took more aggressive policy actions which allowed them to take greater advantage of BART.

Original proponents of the BART system considered revitalization of the downtown areas as a major system objective. Particularly in San Francisco, coordinated public policies for land use and development have allowed the city to take advantage of BART to direct the location and character of development.

- (2) Public Policy Actions In Response To BART Were Most Often Made At The Local, Rather Than The Regional Or State Level Of Government

The emphasis on local policy with respect to BART is a result of the Bay Area institutional setting. During BART planning and development, almost all transit-related decisions were the responsibility of strong local governments or independent transit agencies.

Regional agencies involved in transportation decisions have only been formed in the last ten years. These agencies have yet to play anything but an advisory role in transportation policy decisions. State government, until recently, had expressed little interest in local transportation policy.

#### 4. POLICY IMPLICATIONS

Metropolitan areas now planning rapid rail transit systems are doing so in a significantly different policy environment than did BART in the early 1960's. The BART system was almost entirely locally funded. The Federal government now provides 80% funding for similar transit projects. However, obtaining Federal funding requires compliance with a variety of policy guidelines and procedures for planning and funding such a system, none of which was used during the BART process. As an example, local transit planning must now incorporate the formulation of very specific local transportation objectives and supportive local policies. Therefore, other metropolitan areas will be in a better position to take advantage of rapid rail transit through public policies than was the Bay Area.

The BART experience does provide some "lessons learned" for other jurisdictions planning rapid rail transit development. However, certain characteristics of the Bay Area and the BART development process limit the transferability of these findings.

- . The Bay Area contained strong independent local government structures with an absence of regional or state planning or operating authority with respect to transit. Areas with a strong regional governmental authority or even an effective regional planning agency can expect to have much different experience in coordinating transportation planning and operations.
- . BART system construction was financed almost entirely through a separate local property tax. The availability of Federal funding and the use of different forms of local taxation will have a different impact on local financial policy.
- . BART system planning was completed without the benefit of prior comprehensive regional land use planning (except what BART had to do itself). Regions with such a planning process in place may be able to better coordinate rapid rail system design objectives with local land use policy.
- . The Bay Area includes a variety of separate independent transit operators with no mechanism for coordination before MTC was formed in 1970. Where rail and bus service will be provided by the same transit operator, system coordination issues will be quite different from BART's.

Despite these qualifications about the transferability of BART findings, officials in other metropolitan areas can benefit from the BART experience. Public policy implications are summarized by major policy area in Chapters III through VII of this report and are presented in much greater detail in the Local Policy Implications Final Report, a summary of which is included as Appendix A. This section summarizes the more significant implications in terms of the level of government action required--local, regional or state. Specific laws, regulations and practices in each state will have a significant effect on the level of government involved in any policy decision. However, this discussion is intended as a conceptual approach, suggesting the lowest or generally most likely level of government that should be involved so that the most appropriate policy decision can be made.

#### (1) Local Policy Implications

In other metropolitan areas with a history of strong local government control, most policy actions related to rapid rail transit should be made at the local level of government.

The BART experience suggests that local objectives for rapid rail transit should be set early and local planning should begin well before any type of regional system is approved. Although compliance with Federal Alternatives Analysis guidelines mandates extensive transportation and financial planning, local governments should be sure that they consider the expected impact of various alternatives on their own communities in light of their own local transportation, land use and economic objectives.

Policy areas where local officials can most likely have their greatest impact are:

- . Land Use Planning--General plans should provide the basis for local input in rapid rail transit design decisions, such as route alignment and station location.
- . Economic Policy--Communities should have an economic development plan as a vehicle for identifying local economic objectives. These objectives and more detailed plans should also serve as a basis for recommending specific transit route and station locations within a community.

- . Financial Policy--Depending on the transit financing approach chosen, local officials should project their continuing obligations to existing local transit services, recommending what increment their communities would be willing to pay for regional rail transit service.

If a metropolitan area chooses to develop a rapid rail transit system, local officials should be prepared to take supportive policy actions in areas such as:

- . Land Use Policy--Local officials can use rapid rail transit to help achieve local growth or preservation objectives. The BART experience suggests that rapid rail transit will probably not alter market demand where little now exists. However, rapid rail transit can influence the location and form of development if it is accompanied by supportive local land use policies such as:
  - Realistic land use and development projections must be established before rapid rail transit design is under way to target development opportunities.
  - Once route and station locations are determined, detailed station area and corridor studies should be conducted to assist planners in developing an appropriate package of land use policy actions supporting the desired form and location of development. Policy actions can include a combination of public improvement projects, land acquisition, public redevelopment, zoning and marketing.

- . Traffic And Parking Policy--The significant adverse effects of parking and traffic congestion caused by BART suggest that other jurisdictions should ensure that parking policy, particularly in suburban areas, receives high priority attention from local officials. Alternatives include requiring additional transit parking capacity, implementing parking or traffic restrictions or permit programs, or encouraging other forms of transit access.

- . Financial Policy--Local officials can expect to use rapid rail transit effectively, especially in large cities, to further local improvement objectives and benefit local revenues. Alternatively, local transit system financing decisions may be more difficult with the addition of a rapid rail transit system. Specifically:

- Local officials should not be concerned about transit debt as an effective constraint in local financing plans unless rapid rail transit funding decisions are made by the local government rather than an independent regional transit authority.
- Local governments can lessen the impact of rapid rail transit on their operating budgets through agreements with rapid transit officials to provide desired local amenities to compensate for rapid rail transit construction disruptions.

The formation of a new regional rapid transit organization will probably have little effect on organizational structures and practices at the local level. However, local officials should expect to use additional staff time and possibly consultant assistance to perform

necessary planning and analysis for rapid rail transit. Large cities may want to consider appointing a rapid transit liaison reporting to the mayor or city manager's office to expedite decisions related to rapid rail transit design and construction within the city.

## (2) Regional Policy Implications

Experience in the Bay Area suggests that the lack of strong regional leadership in transit planning and financing can lead to more competitive and time consuming decision processes related to rapid rail transit development. Examples of this problem in BART's development are:

- . Time consuming and heated negotiations among local transit operators resulting in more parallel (and potentially competitive) routes, less feeder service and more cumbersome transfer mechanisms than would have been expected.
- . BART construction delays and cost overruns as a result of local government demands without any regional override.
- . Local land use objectives that were unrealistic when combined into a regional package.

In light of these problems, other metropolitan areas should ensure, prior to approval of rapid rail transit, that institutions are in place with appropriate levels of authority to make the types of decisions that must be made at least on a regional, if not a state basis. Planning and policy decisions which should take place at this level are:

- . Regional land use, economic and transportation planning as a basis for minimizing competition among local communities and local or regional transit operators.
- . Regional transportation financial planning and policy and discretionary funding allocation.
- . Transportation planning and policy across major modes (including highway planning and automobile pricing policy).

### (3) State Policy Implications

The State of California had little involvement in transit generally as well as in BART planning, design and construction, but has become more involved as increasing transit deficits required new sources of funding from the state level. The role of any state in transit planning and financing overall will probably be the most important factor in determining the role of the state in rapid rail transit planning.

Although most rapid rail transit policy decisions should be left to the local and regional levels of government, state agencies and legislators may need to be involved in the following types of policy decisions:

- . Transportation Planning--State transportation planning agencies should cooperate in regional transit alternatives analysis in setting priorities for development of other transportation modes, particularly in the area of highway planning and construction.
- . Financial Planning--State officials should be prepared to consider the state's role in transit financing if a region appears to be unable to meet its financing obligations through its own resources, as happened in the Bay Area.

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The findings and conclusions about Bay Area public officials' response to BART as presented in this report suggest that timely and coordinated public policy actions can be important in directing rapid transit system development to achieve local objectives. However, public officials in other jurisdictions must generally act more aggressively than Bay Area officials did if they intend to take full advantage of rapid transit development.

Local governments considering rapid transit development should become involved early in the planning process. Local officials should recognize both the opportunities and costs of rapid rail transit and formulate specific local objectives with these in mind.



Once local objectives for rapid transit are clearly defined, officials can formulate appropriate public policy actions designed to help a community achieve these objectives. The experience of rapid rail transit development in other metropolitan areas should serve as an important input in this process.

APPENDIX A  
LOCAL POLICY IMPLICATIONS  
OF BART DEVELOPMENT<sup>\*</sup>  
SUMMARY AND FINDINGS

This report is designed primarily for use by local and regional government officials--elected officials, administrators and planners --who are either (1) considering an investment in transit, particularly rapid rail, or (2) in the process of designing and constructing a rapid rail transit system. The purpose of this report is to use the experience of BART as a basis for suggesting the types of local public policies that are likely to enable local officials to achieve their own objectives for rapid rail transit development.

This section briefly summarizes the BART experience as it relates to public policy decisions in other communities. Chapter VII of the report outlines conclusions in slightly more detail. However, for local officials interested in specific types of public policy actions, it is necessary to read the appropriate chapters for an in-depth discussion.

This report concentrates on the local policy implications of BART. Local policy implications are defined as improvements in the public policy-making process to enable local officials to make more informed decisions about rapid rail transit development to help achieve local community objectives. The local policy implications developed in this report are based on answers to four questions:

- . What were the original local goals for BART?  
Were they attained?
- . Were the original local goals and expectations  
for BART really attainable and/or appropriate?
- . If not, could a modification of goals and expectations provide a better basis for local policy decisions related to rail transit?
- . If so, what improvements in the local policy formulation and implementation process can be suggested to help local communities better achieve their objectives for rapid rail transit?

Local officials should recognize that an analysis of the BART experience and its impacts has certain limitations for improving policy-making processes in other regions. Public priorities have changed and the Bay Area and BART development are relatively unique. Despite this, local decision-making processes have not changed dramatically and issues now confronting local officials in Washington, D.C., and Atlanta are remarkably similar to issues raised in the Bay Area not too long ago.

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\* Booz, Allen & Hamilton Inc., The Local Policy Implications of BART Development, Document No. DOT-BIP-FR-15-878 (Berkeley: Metropolitan Transportation Commission, February 1978).

The following three sections summarize conclusions regarding the role of rapid rail transit in achieving local objectives; the institutional setting for rapid rail transit development; and the approach to planning, constructing and operating a rapid rail transit system.

1. A RAPID RAIL TRANSIT SYSTEM BY ITSELF HAS A LIMITED ABILITY TO MEET LOCAL COMMUNITY OBJECTIVES

As the BART experience shows, rapid transit alone will not allow a region to achieve all the varied objectives and expectations which led community officials and citizens to support such a system originally. BART Impact Program results suggest BART has not yet been very successful in achieving its objectives, but two qualifications should be added:

- . BART has only been in operation five years, hardly enough time to assess whether BART can be viewed as a success or failure.
- . Local officials generally overstated the expectations for BART in order to gain public support. Further, they did not always implement the kind of supportive public policies to complement BART.

In this light, local officials should make sure that their expectations are realistic based on BART's and other new systems' experience and begin planning early to identify appropriate public policy strategy to support rapid rail development.

2. SUPPORTIVE INSTITUTIONAL ARRANGEMENTS ARE CRITICAL TO ACHIEVING RAPID RAIL TRANSIT EXPECTATIONS

The BART experience suggests that metropolitan areas with strong local government control and lacking effective regional and state participation in transit planning will have a difficult time achieving rapid rail transit objectives. Creating a new regional agency (like BART) for rapid rail transit development will not alone solve this problem, as the Bay Area found. Further, combining all transit service under a single regional transit operator may be an improvement. But this approach removes any basis for competition and service decisions may be far removed from the local communities served by the system.

A preferred institutional approach would be a combination of the following components:

- . Individual transit operators within a region to foster a competitive spirit, but with sufficient oversight to prevent direct competition on individual routes. Public officials on an elected or appointed board of directors should have the responsibility for policy decisions and liaison with local governments.
- . A regional or state transportation planning agency (like the Metropolitan Transportation Commission in the Bay Area) with funding leverage over individual transit operators.
- . A loosely structured regional association of transit operators to facilitate coordination of joint activities such as purchasing, marketing and public relations.
- . Local governments should retain the option to initiate transit on a contract basis, seeking bids from various public and private transportation companies.

The first two of these components are the most essential for avoiding problems faced in the Bay Area during BART development. The latter two components provide a number of benefits but are not critical to achieving the objectives of a rapid transit system.

### 3. SUPPORTIVE LOCAL POLICY ACTIONS ARE NECESSARY TO ACHIEVE COMMUNITY OBJECTIVES FOR RAPID RAIL TRANSIT DEVELOPMENT

For rapid rail transit development to meet community objectives, local officials must be involved in each stage of transit development. This section briefly outlines the types of supportive local policy actions which should be taken at each of five transit development stages.

#### (1) Planning

The initial rapid rail transit planning stage is where local officials have an opportunity to assess whether rapid rail transit is the appropriate choice for meeting local objectives and, if so, develop engineering and financing plans. Three major products which should flow from local officials' involvement are:

- . Local and regional plans for land use and development, the local economy and the environment are important inputs to the rapid rail transit planning process.

- . A transit system plan should be developed using the existing Federal procedures. At this point, local and regional plans are combined with specific transportation objectives to develop transportation alternatives.
- . A transit financing plan should be developed once rapid rail transit is determined to be the appropriate transit alternative. Financing for a rapid rail system should be considered in the context of total transit financing for a given region.

## (2) Design

Rapid transit system design is the area where local government involvement can be most productive and essential. At this point, a region has decided to implement a rapid rail transit system, has approved a financing plan (including both Federal and local sources) and is now ready to begin detailed system planning and design.

Three categories of design decisions--route and station location, system configuration and station and train design--should be of greatest interest to local officials. The process by which these decisions are made and implemented should include three basic activities:

- . Preparing or assembling local land use, economic, environmental and transportation service plans and objectives as a basis for system design decisions. These should be consistent with regional plans.
- . Making system and station design decisions which seek to accommodate local preferences.
- . Taking steps to plan appropriate local policy strategies to take advantage of transit development. Specific steps include:
  - Station area and corridor land use and economic studies

- Capital improvement scheduling
- Joint development plans
- Local design review

(2) Construction

During transit construction, local officials should be involved in two distinct types of activities--construction coordination and pre-operations planning.

- . Construction coordination is necessary where rapid transit construction will take place along existing local rights-of-way or near existing residential and commercial development. Specific local government activities include:
  - Construction planning
  - Negotiation of agreements between local governments and the transit district
  - Local capital improvement scheduling
  - Coordination of local capital improvement projects with rapid transit construction (joint development)
- . Pre-operations planning relates to specific agreements which should be reached or plans which should be developed prior to operations startup. This local planning effort should include four major activities:
  - Land use strategy development
  - Parking and traffic management planning
  - Facilities maintenance agreements
  - Transit service coordination

#### (4) Startup

At the point rapid rail transit service actually begins, the role of local governments should be diminished greatly. Therefore, the only activities required by local officials are:

- . Implementation of public policy actions and strategies already determined.
- . Monitoring system progress to identify unexpected occurrences and develop new or revise existing local policies if necessary.

#### (5) Operations

Although BART has been operating for almost five years, all of the services and lines have not yet been phased in (Sunday service and the opening of the Richmond-Daly City line are not scheduled to begin before spring 1978) and operating problems remain higher than normal. Therefore, BART has not really reached the fifth stage of continuing operations and no specific implications have been developed. Based on experience thus far, the probable roles of local officials will be:

- . Monitoring system progress.
- . Planning for system extensions or modifications.

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Overall, we have tried to provide some general policy guidance to local officials who want to take advantage of rapid rail transit development to meet some of their community's objectives as well as want to avoid some of the potential problems and disruptions of this development. However, it is difficult to transfer insights from the Bay Area to other, quite different jurisdictions--to avoid implications that are either too general or too specific. We have tended to err on the general and more universal side, hoping that local officials can use this report more as a checklist in structuring appropriate public policies for their own community.



## APPENDIX B

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